HSPT PRACTICE EXAM

BASIC ALGEBRA

1. If Lynn can type a page in p minutes, what piece of the page can she do in 5 minutes?

A. 5/p
B. p - 5
C. p + 5
D. p/5
E. 1- p + 5

2. If Sally can paint a house in 4 hours, and John can paint the same house in 6 hours, how long will it take for both of them to paint the house together?

A. 2 hours and 24 minutes
B. 3 hours and 12 minutes
C. 3 hours and 44 minutes
D. 4 hours and 10 minutes
E. 4 hours and 33 minutes

3. Employees of a discount appliance store receive an additional 20% off of the lowest price on an item. If an employee purchases a dishwasher during a 15% off sale, how much will he pay if the dishwasher originally cost $450?

A. $280.90
B. $287
C. $292.50
D. $306
E. $333.89

4. The sales price of a car is $12,590, which is 20% off the original price. What is the original price?

A. $14,310.40
B. $14,990.90
C. $15,290.70
D. $15,737.50
E. $16,935.80

5. Solve the following equation for A : $2A/3 = 8 + 4A$

A. -2.4
B. 2.4
C. 1.3
D. -1.3
E. 0

6. If Leah is 6 years older than Sue, and John is 5 years older than Leah, and the total of their ages is 41. Then how old is Sue?

A. 8
B. 10
C. 14
D. 19
E. 21

7. Alfred wants to invest $4,000 at 6% simple interest rate for 5 years. How much interest will he receive?

A. $240
B. $480
C. $720
D. $960
E. $1,200

8. Jim is able to sell a hand-carved statue for $670 which was a 35% profit over his cost. How much did the statue originally cost him?

A. $496.30
B. $512.40
C. $555.40
D. $574.90
E. $588.20

9. The city council has decided to add a 0.3% tax on motel and hotel rooms. If a traveler spends the night in a motel room that costs $55 before taxes, how much will the city receive in taxes from him?

A. 10 cents
B. 11 cents
C. 15 cents
D. 17 cents
E. 21 cents

10. A student receives his grade report from a local community college, but the GPA is smudged. He took the following classes: a 2 hour credit art, a 3 hour credit history, a 4 hour credit science course, a 3 hour credit mathematics course, and a 1 hour science lab. He received a "B" in the art class, an "A" in the history class, a "C" in the science class, a "B" in the mathematics class, and an "A" in the science lab. What was his GPA if the letter grades are based on a 4 point scale? (A=4, B=3, C=2, D=1, F=0)

A. 2.7
B. 2.8
C. 3.0
D. 3.1
E. 3.2

11. Simon arrived at work at 8:15 A.M. and left work at 10: 30 P.M. If Simon gets paid by the hour at a rate of $10 and time and ½ for any hours worked over 8 in a day. How much did Simon get paid?

A. $120.25
B. $160.75
C. $173.75
D. $180
E. $182.50

12. Grace has 16 jellybeans in her pocket. She has 8 red ones, 4 green ones, and 4 blue ones. What is the minimum number of jellybeans she must take out of her pocket to ensure that she has one of each color?

A. 4
B. 8
C. 12
D. 13
E. 16

13. If r = 5 z then 15 z = 3 y, then r =

A. y
B. 2 y
C. 5 y
D. 10 y
E. 15 y

14. If 300 jellybeans cost you x dollars. How many jellybeans can you purchase for 50 cents at the same rate?

A. 150/x
B. 150x
C. 6x
D. 1500/x
E. 600x

15. Lee worked 22 hours this week and made $132. If she works 15 hours next week at the same pay rate, how much will she make?

A. $57
B. $90
C. $104
D. $112
E. $122

Advanced Algebra

1. If the average of three numbers is V. If one of the numbers is Z and another is Y, what is the remaining number?

A. ZY - V
B. Z/V - 3 - Y
C. Z/3 - V - Y
D. 3V- Z - Y
E. V- Z - Y

2. Two cyclists start biking from a trail's start 3 hours apart. The second cyclist travels at 10 miles per hour and starts 3 hours after the first cyclist who is traveling at 6 miles per hour. How much time will pass before the second cyclist catches up with the first from the time the second cyclist started biking?

A. 2 hours
B. 4 ½ hours
C. 5 ¾ hours
D. 6 hours
E. 7 ½ hours

3. Jim can fill a pool carrying buckets of water in 30 minutes. Sue can do the same job in 45 minutes. Tony can do the same job in 1 ½ hours. How quickly can all three fill the pool together?

A. 12 minutes
B. 15 minutes
C. 21 minutes
D. 23 minutes
E. 28 minutes

4. Mary is reviewing her algebra quiz. She has determined that one of her solutions is incorrect. Which one is it?

A. 2x + 5 (x-1) = 9, x = 2
B. p - 3(p-5) = 10, p = 2.5
C. 4 y + 3 y = 28, y = 4
D. 5 w + 6 w - 3w = 64, w = 8
E. t - 2t - 3t = 32, t = 8

5. What simple interest rate will Susan need to secure to make $2,500 in interest on a $10,000 principal over 5 years?

A. 4%
B. 5%
C. 6%
D. 7%
E. 8%

6. Which of the following is not a rational number?

A. -4
B. 1/5
C. 0.8333333...
D. 0.45
E. $\sqrt{2}$

7. A study reported that in a random sampling of 100 women over the age of 35 showed that 8 of the women were married 2 or more times. Based on the study results, how many women in a group of 5,000 women over the age of 35 would likely be married 2 or more times?

A. 55
B. 150
C. 200
D. 400
E. 600

8. John is traveling to a meeting that is 28 miles away. He needs to be there in 30 minutes. How fast does he need to go to make it to the meeting on time?

A. 25 mph
B. 37 mph
C. 41 mph
D. 49 mph
E. 56 mph

9. If Steven can mix 20 drinks in 5 minutes, Sue can mix 20 drinks in 10 minutes, and Jack can mix 20 drinks in 15 minutes, how much time will it take all 3 of them working together to mix the 20 drinks?

A. 2 minutes and 44 seconds
B. 2 minutes and 58 seconds
C. 3 minutes and 10 seconds
D. 3 minutes and 26 seconds
E. 4 minutes and 15 seconds

10. If Sam can do a job in 4 days that Lisa can do in 6 days and Tom can do in 2 days, how long would the job take if Sam, Lisa, and Tom worked together to complete it?

A. 0.8 days
B. 1.09 days
C. 1.23 days
D. 1.65 days
E. 1.97 days

Analogies 1

1. DRIP : GUSH

A. CRY : LAUGH
B. CURL : ROLL
C. STREAM : TRIBUTARY
D. DENT : DESTROY
E. BEND : ANGLE

2. WALK : LEGS

A. GLEAM : EYES
B. CHEW : MOUTH
C. DRESS : HEM
D. COVER : BOOK
E. GRIND : NOSE

3. ENFRANCHISE : SLAVERY

A. EQUATION : MATHEMATICS
B. LIBERATE : CONFINE
C. BONDAGE : SUBJUGATION
D. APPEASEMENT : UNREASONABLE
E. ANATOMY : PHYSIOLOGY

4. UNION JACK : VEXILLOLOGY

A. TOAD : ORNITHOLOGY
B. TURTLE : MICROBIOLOGY
C. GYMNOSPERMS : BOTANY
D. FRIEND : HOME ECONOMICS
E. ALGAE : ZOOLOGY

5. TOPAZ : YELLOW

A. DIAMOND : CARAT
B. JEWELER : CLARITY
C. SAPPHIRE : RED
D. AMETHYST : PURPLE
E. AMBER : BLUE

6. LUMEN : BRIGHTNESS

A. CANDLE : LIGHT
B. DENSITY : DARKNESS
C. NICKEL : METAL
D. INCHES : LENGTH
E. COLOR : HUE

7. MACERATION : LIQUID

A. SUBLIMATION : GAS
B. EVAPORATION : HUMIDITY
C. TRAIL : PATH
D. EROSION : WEATHER
E. DECISION : DISTRACTION

8. CLUMSY : BOTCH

A. WICKED : INSINUATE
B. STRICT : PAMPER
C. WILLFUL : HEED
D. CLEVER : ERADICATE
E. LAZY : SHIRK

9. FUGITIVE : FLEE

A. PARASITE : FOSTER
B. BRAGGART : BOAST
C. SAGE : STIFLE
D. BYSTANDER : PROCURE
E. FIREBRAND : QUIBBLE

10. CHRONOLOGICAL : TIME

A. VIRTUAL : TRUTH
B. ABNORMAL : VALUE
C. MARGINAL : KNOWLEDGE
D. ORDINAL : PLACE
E. COINCIDENTAL : HEALTH

11. SOOT : GRIMY

A. FROST : TRANSPARENT
B. SUNSHINE : FRUITLESS
C. RAIN : SODDEN
D. PALL : GAUDY
E. DUST : RADIANT

12. MORBID : UNFAVORABLE

A. REPUTABLE : FAVORABLE
B. MATERNAL : UNFAVORABLE
C. DISPUTATIOUS : FAVORABLE
D. VIGILANT : UNFAVORABLE
E. LAX : FAVORABLE

13. SULLEN : BROOD

A. LETHARGIC : CAVORT
B. REGAL : CRINGE
C. DOCILE : OBEY
D. POISED : BLUNDER
E. DESPONDENT : LAUGH

14. AUTHOR : LITERATE

A. CYNIC : GULLIBLE
B. HOTHEAD : PRUDENT
C. SAINT : NOTORIOUS
D. JUDGE : IMPARTIAL
E. DOCTOR : FALLIBLE

15. MASSIVE : BULK

A. ULTIMATE : MAGNITUDE
B. TRIVIAL : IMPORTANCE
C. ANONYMOUS : LUSTER
D. INTERMINABLE : LEGACY
E. GIGANTIC : SIZE

Antonyms

1. DOTE :

A. AVERSION
B. ANTIDOTE
C. FOOLISH
D. CREATIVITY
E. DARING

2. IMBROGLIO :

A. FIGHT
B. CONCLUSION
C. TRUST
D. THANKFULNESS
E. HARMONY

3. REMINISCE :

A. ORIGINATE
B. IGNORE
C. CREATE
D. RECONVENE
E. CREDIT

4. EXPEDITE :

A. DISPATCH
B. DAWDLE
C. PRECIPITATE
D. OVERLOOK
E. CREED

5. ONUS :

A. EASEMENT
B. CAPABILITY
C. OBLIGATION
D. TRACTION
E. BELIEF

6. SQUALOR :

A. IMPURITY
B. WEALTH
C. CONSUMPTION
D. FECES
E. INDIGENCE

7. RETICENT :

A. TIRED
B. FORWARD
C. SHY
D. DRAINED
E. ELEGANT

8. NEXUS :

A. SEPARATION
B. CONNECTION
C. RESPECT
D. VINCULUM
E. DISTRACTION

9. NOISOME :

A. FETID
B. RANK
C. SALUBRIOUS
D. PACIFIC
E. PESTILENT

Averages and Rounding

1. Round 907.457 to the nearest tens place.

A. 908.0
B. 910
C. 907.5
D. 900
E. 907.46

2. At a certain high school, the respective weights for the following subjects are: Mathematics 3, English 3, History 2, Science 2 and Art 1.
What is a student's average whose marks were the following: Geometry 89, American Literature 92, American History 94, Biology 81, and Sculpture 85?

A. 85.7
B. 87.8
C. 88.9
D. 89.4
E. 90.2

3. Ginger over the course of an average work-week wanted to see how much she spent on lunch daily. She spent $5.43 on Monday, and the same amount on Thursday. On Tuesday and Wednesday, she spent $3.54 each day. On Friday, she spent $7.89 on lunch. What was her average daily cost?

A. $3.19
B. $3.75
C. $3.90
D. $5.17
E. $4.23

4. What is 1230.932567 rounded to the nearest hundredths place?

A. 1200

B. 1230.9326

C. 1230.93

D. 1230

E. 1230.933

5. Subtract the following numbers rounded to the nearest tenths place.

134.679

-45.548

-67.8807

A. 21.3

B. 21.25

C. -58.97

D. -59.0

E. 1

6. What is the absolute value of -9?

A. -9

B. 9

C. 0

D. -1

E. 1

7. What is the median of the following list of numbers? 4, 5, 7, 9, 10, 12

A. 6

B. 7.5

C. 7.8

D. 8

E. 9

8. What is the mathematical average of the number of weeks in a year, seasons in a year, and the number of days in January?

A. 36
B. 33
C. 32
D. 31
E. 29

9. In a college, some courses contribute more towards an overall GPA than other courses. For example, a science class is worth 4 points; mathematics is worth 3 points; history is worth 2 points; and English is worth 3 points. The values of the grade letters are as follows, A= 4, B=3, C=2, D=1, F=0. What is the GPA of a student who made a "C" in Trigonometry, a "B" in American History, an "A" in Botany, and a "B" in Microbiology?

A. 2.59
B. 2.86
C. 3.08
D. 3.33
E. 3.67

10. Over the course of a week, Fred spent $28.49 on lunch. What was the average cost per day?

A. $4.07
B. $3.57
C. $6.51
D. $2.93
E. $5.41

Basic Operations

1. Add 0.98 + 45.102 + 32.3333 + 31 + 0.00009

A. 368.573
B. 210.536299
C. 109.41539
D. 99.9975
E. 80.8769543

2. Find 0.12 ÷ 1

    A. 12

    B. 1.2

    C. .12

    D. .012

    E. .0012

3. (9 ÷ 3) x (8 ÷ 4) =

    A. 1

    B. 6

    C. 72

    D. 576

    E. 752

4. 6 x 0 x 5

    A. 30

    B. 11

    C. 25

    D. 0

    E. 27

5. 7.95 ÷ 1.5

    A. 2.4

    B. 5.3

    C. 6.2

    D. 7.3

    E. 7.5

6. -32 + 7 equals:

    A. -25

    B. 25

    C. -26

    D. 26

    E. 27

7. -37 + -47 equals:

  A. 64
  B. -84
  C. 65
  D. -75
  E. -66

8. 41% equals:

  A. 4.1
  B. .41
  C. .041
  D. .0041
  E. .00415

Commas

The following sentences either have existing or require additional commas somewhere in their structures. Choose the option that best reflects proper comma usage in each sentence.

1. For the Thanksgiving reunion, relatives were sitting in the dining room, on the porch, and in the carport.

A. Thanksgiving, reunion
B. were, sitting
C. porch and
D. No error

2. Lydia seems to be a kind, considerate girl.

A. seems, to
B. considerate, girl
C. kind considerate
D. No error

3. This fishing pole Nathan, has seen better days.

A. pole, Nathan,
B. has, seen
C. Nathan
D. No error

4. My cousin has moved to 56 Central Street Narragansett, Rhode Island 02882.

A. has moved,
B. Central Street,
C. 56, Central
D. No error

5. The badger, a shy animal sometimes makes friends with a coyote.

A. sometimes, makes
B. friends, with
C. a shy animal,
D. No error

6. After the death of Blackbeard, the famous pirate, piracy disappeared from the coast of the American colonies.

A. the famous pirate
B. after the death,
C. coast, of
D. No error

7. "Silent Night" was written by two men from the village of Oberndorf Austria.

A. men, from
B. "Silent Night,"
C. Oberndorf, Austria
D. No error

8. On November 19, 1929 Admiral Richard E. Byrd flew the Floyd Bennett to the base of the Queen Maud Mountains.

A. base, of
B. the, Queen
C. 1929,
D. No error

9. Oh I forgot to bring the cookies.

A. Oh,
B. I, forgot
C. to, bring
D. No error

10. "The boy in the kayak," whispered Sue "is the new football captain."

A. boy, in the
B. new, football
C. whispered Sue,
D. No error

Estimation and Sequences

1. Describe the following sequence in mathematical terms. 144, 72, 36, 18, 9

   A. Descending arithmetic sequence
   B. Ascending arithmetic sequence
   C. Descending geometric sequence
   D. Ascending geometric sequence
   E. Miscellaneous sequence

2. Which of the following is not a whole number followed by its square?

   A. 1, 1
   B. 6, 36
   C. 8, 64
   D. 10, 100
   E. 11, 144

3. A nurse has to record her temperatures in Celsius but her thermometer reads Fahrenheit. A patient's temperature is 100.7° F. What is the temperature in °C?

    A. 32° C
    B. 36.5° C
    C. 38.2° C
    D. 213.3° C
    E. 223.7° C

4. Art realized that he had 2 more quarters than he had originally thought in his pocket. If all of the change in his pocket is quarters and it totals to $8.75, how many quarters did he originally think were in his pocket?

    A. 27
    B. 29
    C. 31
    D. 33
    E. 35

5. There are 12 more apples than oranges in a basket of 36 apples and oranges. How many apples are in the basket?

    A. 12
    B. 15
    C. 24
    D. 28
    E. 36

6. Which of the following correctly identifies 4 consecutive odd integers where the sum of the middle two integers is equal to 24?

    A. 5, 7, 9, 11
    B. 7, 9, 11, 13
    C. 9, 11, 13, 15
    D. 11, 13, 15, 17
    E. 13, 15, 17, 19

7. What is the next number in the sequence? 6, 12, 24, 48, ____

    A. 72
    B. 96
    C. 108
    D. 112
    E. 124

8. Which of the following numbers could be described in the following way: an integer that is a natural, rational and whole number?

    A. 0
    B. 1
    C. 2.33
    D. -3
    E. none of the above

9. What is the next number in the following pattern? 1, 1/2, 1/4, 1/8, ____

    A. 1/10
    B. 1/12
    C. 1/14
    D. 1/15
    E. 1/16

10. Of the following units, which would be most likely to measure the amount of sugar needed in a recipe for 2 dozen cookies

    A. degrees Celsius
    B. milliliters
    C. quarts
    D. kilograms
    E. cups

Exponents

1. 10^4 is not equal to which of the following?

    A. 100,000
    B. 0.1×10^5
    C. 10 x 10 x 10 x 10
    D. $10^2 \times 10^2$
    E. 10,000

2. Multiply 10^4 by 10^2

    A. 10^8
    B. 10^2
    C. 10^6
    D. 10^{-2}
    E. 10^3

3. Divide x^5 by x^2

    A. x^7
    B. x^4
    C. x^{10}
    D. x^3
    E. $x^{2.5}$

4. Find 8.23×10^9

    A. 0.00000000823
    B. 0.000000823
    C. 8.23
    D. 8230000000
    E. 823000000000

5. 83,000 equals:

    A. 83.0×10^4
    B. 8.3×10^4
    C. 8.3×10^3
    D. 83.0×10^5
    E. 83.0×10^2

6. .00875 equals:

    A. 8.75×10^{-2}

    B. 8.75×10^{-3}

    C. 8.75×10^{-4}

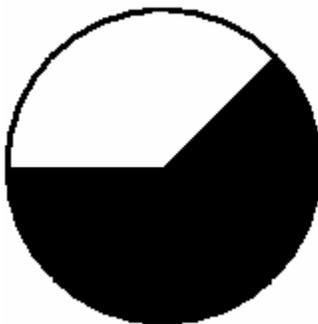   D. 87.5×10^{-3}

    E. 875×10^{-4}

Fractions and Square Roots

1. What is the improper fraction or mixed number represented by the following figure?

A. $2\,{}^{1}/_{3}$

B. ${}^{7}/_{6}$

C. $2\,{}^{5}/_{8}$

D. ${}^{11}/_{3}$

E. ${}^{11}/_{9}$

2. Which of the following fractions most correctly depicts the shaded area of the circle below?

A. $3/8$

B. $5/8$

C. $3/4$

D. $5/11$

E. $1/2$

3. Which of the following is not a fraction equivalent to 3/4?

A. $6/8$

B. $9/12$

C. $12/18$

D. $21/28$

E. $27/36$

4. Solve: 0.25 + 0.65

A. $1/2$

B. $9/10$

C. $4/7$

D. $2/9$

E. $5/16$

5. Which of the following statements is false?

A. In the fraction ½, one is the numerator.

B. When 4.89 is rounded to the ones place, the answer is 5.

C. Ten thousandths place is located 5 places to the right of the decimal

D. $7/6$ is described as an improper fraction.

E. 33 $1/3$ % is equivalent to $1/3$

6. Find the square of $25/9$

A. $5/3$

B. $3/5$

C. $7\ 58/81$

D. $15/2$

E. $650/81$

7. Sarah needs to make a cake and some cookies. The cake requires $3/8$ cup of sugar and the cookies require 3/5 cup of sugar. Sarah has $15/16$ cups of sugar. Does she have enough sugar, or how much more does she need?

A. She has enough sugar.
B. She needs $1/8$ of a cup of sugar.
C. She needs $3/80$ of a cup of sugar.
D. She needs $4/19$ of a cup of sugar.
E. She needs $1/9$ of a cup of sugar.

8. There are 8 ounces in a ½ pound. How many ounces are in $7\,3/4$ lbs?

A. 12 ounces
B. 86 ounces
C. 119 ounces
D. 124 ounces
E. 138 ounces

**9. If the value of x and y in the following fraction are both tripled, how does the value of the fraction change?**
$$\frac{XZ}{Y}$$

A. increases by half
B. decreases by half
C. triples
D. doubles
E. remains the same

10. Which of the following fractions is the equivalent of 0.5%

A. $1/20$
B. $1/200$
C. $1/2000$
D. $1/5$
E. $1/500$

Geometry

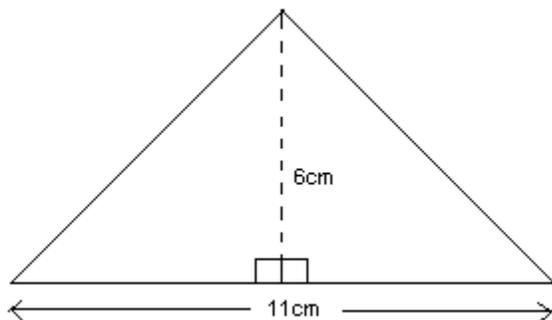**1. Which of the following letters represents the vertex in the following picture?**
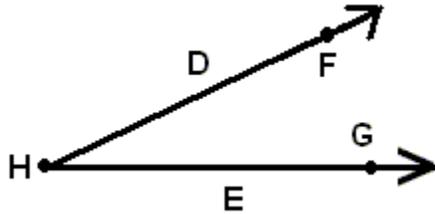
A. D and E
B. E and H
C. F and G
D. G only
E. H only

2. If a circle has the diameter of 8, what is the circumference?

A. 6.28
B. 12.56
C. 25.13
D. 50.24
E. 100.48

3. What is the area of the triangle below?

A. 22 cm²

B. 33 cm²

C. 44 cm²

D. 50 cm²

E. 66 cm²

4. What is the measure of the solid line angle depicted by the following figure?
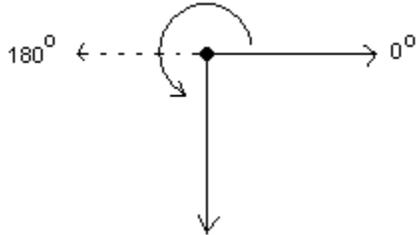
A. 90 degrees

B. 180 degrees

C. 225 degrees

D. 270 degrees

E. 0 degrees

5. What is the measure of angle B in the following figure if angle A measures 135°?
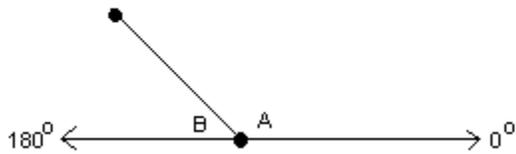
A. 40°

B. 45°

C. 50°

D. 135°

E. 225°

Graphs

1. In the following figure, what is the area of the shaded circle inside of the square?
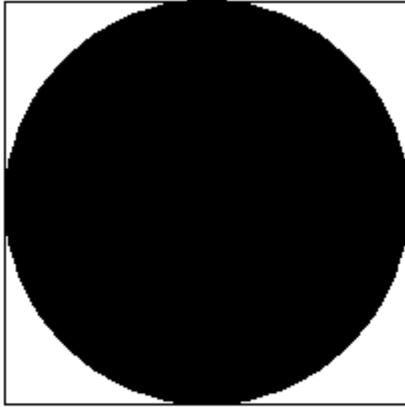
4

    A. 512
    B. 256
    C. 16
    D. 50.24
    E. 12.57

2. In the figure below, determine the area of the shaded region of the figure.
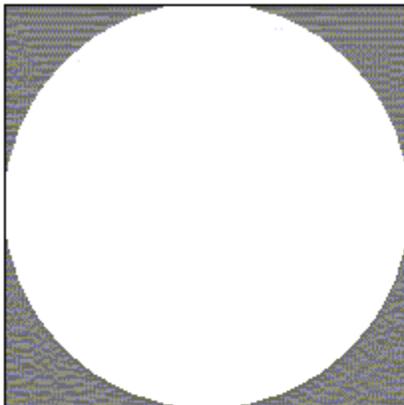
7

A. 9.354
B. 10.52
C. 16.437
D. 49
E. 104.86

3. What are the coordinates of point A on the following graph?
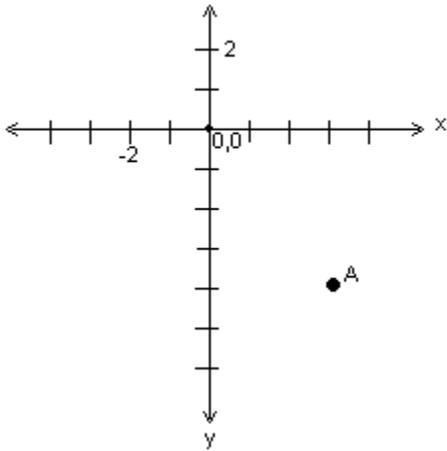
A. (-3, -4)
B. (-4, 3)
C. (3, -4)
D. (-4, -3)
E. (3, 4)

4. What was the average number of babies that Dr. Jones delivered each year from 1995 to 1998?

The Number of Babies Delivered By
Dr. Jones from 1995 to 1998

Each
Rattle
Represents
10 Babies
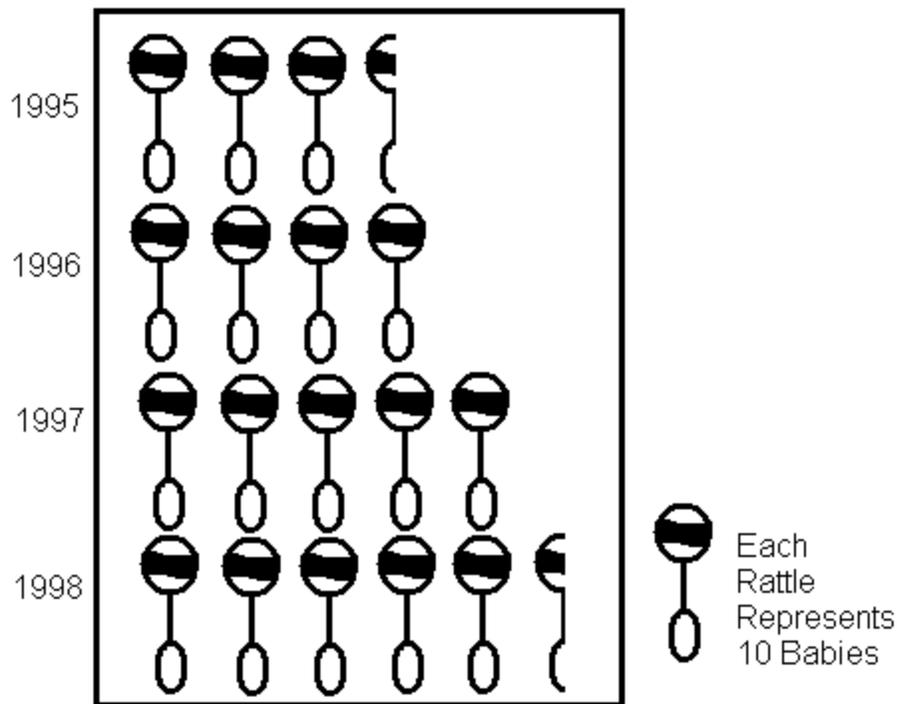
A. 35
B. 40
C. 45
D. 50
E. 55

5. How many babies did Dr. Jones deliver in 1998?

A. 25
B. 35
C. 45
D. 55
E. 65

6. If Dr. Jones delivered 85 babies in 1999, how many rattles would represent this number?

    A. 6 ½
    B. 7
    C. 7 ½
    D. 8
    E. 8 ½

7. If XYZ Auto Company sold 23,000 vehicles in 1999, how many were SUV's?

Percentage of Vehicle Types that XYZ
Auto Company sold in 1999
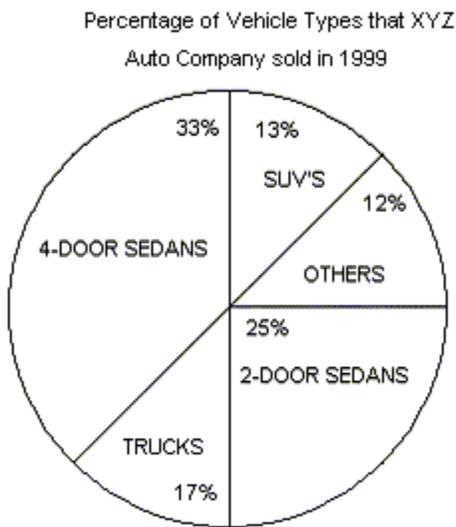
    A. 2,990
    B. 3,030
    C. 3,450
    D. 4,760
    E. 4,775

8. If 7,650 trucks were sold in 1999, how many total vehicles were sold in 1999 by XYZ Auto Company?

    A. 35,000
    B. 40,000
    C. 45,000
    D. 50,000
    E. 55,000

9. If 3,750 2-door sedans were sold in 1999, then how many 4-door sedans were sold in 1999 by XYZ Auto Company?

    A. 3,578
    B. 4,950
    C. 5,120
    D. 5,670
    E. 5,845

10. How much did the infant gain in the first month of life?

Infant Weight Gain in Pounds Over First Six Months of Life
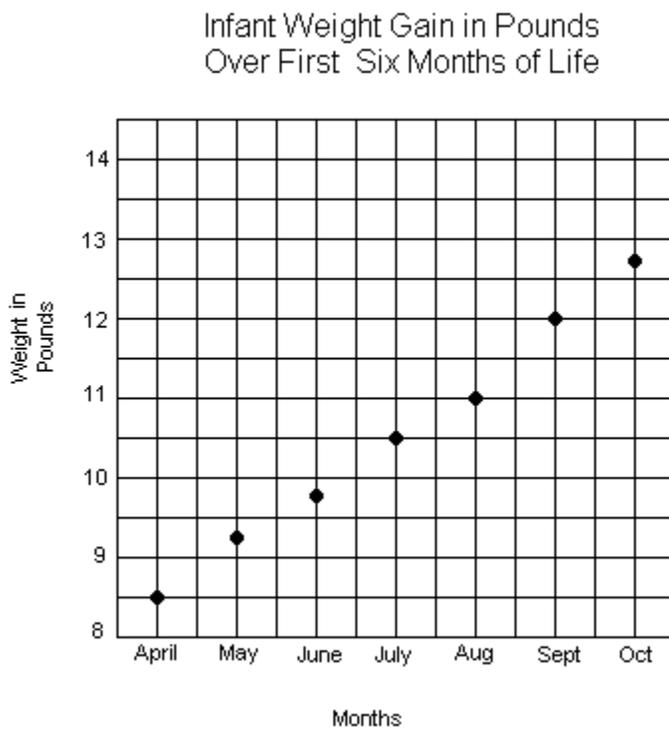
    A. 6 ounces
    B. 12 ounces
    C. 15 ounces
    D. 8 lbs 8 ounces
    E. 9 lbs 4 ounces

Intermediate Grammar

1. The word *boycott* derives from the name of Charles C. Boycott, an English land agent in Ireland <u>that was ostracized for refusing</u> to reduce rent.

A. that was ostracized for refusing
B. who was ostracized for refusing
C. which was ostracized for refusing
D. that had been ostracized for refusing
E. who had been ostracized for refusing

2. As a result of his method for early music education, Shinichi Suzuki <u>has been known as one</u> of the world's great violin teachers.

A. has been known as one
B. had been known as one
C. is seen as one
D. is being seen as one
E. has been one

3. Last night the weather forecaster announced that <u>this is the most rainy season the area has had in the past decade.</u>

A. this is the most rainy season the
B. this has been the most rainy season the
C. this was the most rainy season the
D. this is noted as the most rainy season the
E. this is the rainiest season the

4. Although Mandy is younger than her sister, Mandy <u>is the tallest of the </u>two.

A. is the tallest of the
B. is the taller of the
C. has been the taller of the
D. is the most tall of the
E. is the more taller of the

5. When Katherine Hepburn's play came to town, all the tickets had sold out far in advance.

A. had sold out far
B. have sold out far
C. were sold out far
D. had been sold out far
E. had been sold out for

6. The origins of most sports is unknown.

A. sports is unknown
B. sports have been unknown
C. sports are unknown
D. sports has been unknown
E. sports are now unknown

7. Neither of the Smith brothers expect to be drafted by a major league team this year.

A. expect to be drafted
B. expects to be drafted
C. has expected to be drafted
D. is expecting to be drafted
E. was expecting to be drafted

8. Has any of the witnesses been sworn in yet?

A. Has any of the
B. Is any of the
C. Will any of the
D. Are any of the
E. Have any of the

9. The*Lusitania* sunk on May 7, 1915.

A. sunk
B. did sink
C. was sunk
D. did sank
E. sank

10. <u>Whos in</u> the office now?

A. Whos in
B. Whose in
C. Who is in
D. Who's in
E. Whose' in

<u>Advanced Grammar</u>

Each of the following sentences contains an error of some kind. Read each sentence and select the option that correctly identifies its error.

1. David was known for belching; and telling inappropriate jokes in public.

A. Capitalization
B. Punctuation
C. Spelling
D. Grammar

2. Graduation from High School is considered a momentous occasion by many.

A. Capitalization
B. Punctuation
C. Spelling
D. Grammar

3. Nurses plays a vital role in the healthcare profession.

A. Capitalization
B. Punctuation
C. Spelling
D. Grammar

4. After having his tonsels removed, the child was listless for a few days.

A. Capitalization
B. Punctuation
C. Spelling
D. Grammar

5. The park was serine at twilight.

A. Capitalization
B. Punctuation
C. Spelling
D. Grammar

6. Was the patient's mind lucid during the evaluation.

A. Capitalization
B. Punctuation
C. Spelling
D. Grammar

7. The bachalor never married. Most people thought it was because of misogyny.

A. Capitalization
B. Punctuation
C. Spelling
D. Grammar

8. The intricacy of the mathematical equation, drove the student trying to solve it crazy.

A. Capitalization
B. Punctuation
C. Spelling
D. Grammar

9. The hybrid tomatoes is immune to most common diseases.

A. Capitalization
B. Punctuation
C. Spelling
D. Grammar

10. The professor was humiliated when his students reported him to the Dean for verbal abuse.

A. Capitalization
B. Punctuation
C. Spelling
D. Grammar

Intermediate Math

1. Two angles of a triangle each measure 70°. What is the measure of the third angle in degrees?

A. 40°
B. 80°
C. 100°
D. 120°
E. 140°

2. If Jack needs 2 ½ pints of cream to make a dessert. How many pints will he need to make 3 desserts?

A. 2 ½
B. 3
C. 4
D. 5
E. 7 ½

3. A discount store takes 50% off of the retail price of a desk. For the store's holiday sale, it takes an additional 20% off of all furniture. The desk's retail price was $320. How much is the desk on sale for during the holiday sale?

A. $107
B. $114
C. $128
D. $136
E. $192

4. Which vacation destination is most common for the students?

Vacation Destinations for Students
Attending Washington Middle School

25% | 15%
Beach
Historical Sites
7% Cruises
25% None
Other
6%
Mountains
Amusement Parks
12%
10%
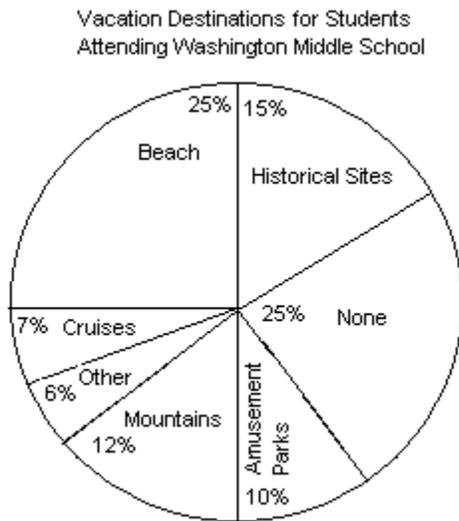
A. Beach
B. Historical Sites
C. Cruises
D. Mountains
E. Other

5. If 500 students attend Washington Middle School, how many are going to the mountains for vacation?

A. 25
B. 60
C. 75
D. 100
E. 125

6. If a ¼ of a teaspoon is 1 ml, then how many milliliters are in 6 teaspoons?

A. 10 ml
B. 12.5 ml
C. 15 ml
D. 20 ml
E. 24 ml

7. Which of the following is the correct graph for x≥3 or x≤ -2?

A.
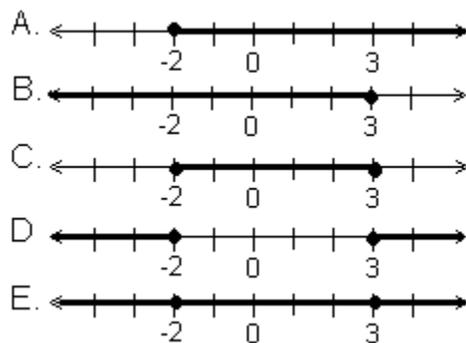
A. Line A
B. Line B
C. Line C
D. Line D
E. Line E

8. A scale on a map states that every ¼ of an inch represents 20 miles. If two cities are 3 ½ inches apart, how many miles are actually between the two cities?

A. 14 miles
B. 20 miles
C. 125 miles
D. 230 miles
E. 280 miles

9. Michelle wants to expand her flowerbed by increasing the length and width each by 2 ft. What will the new area of the flowerbed be, if L and W represent the original dimensions of the flowerbed's length and width?

A. 2 LW
B. 2 (L+W)
C. 2L +2W
D. (L+2) (W+2)
E. LW/2

10. Melinda's lights went out. She has 3 pairs of red socks in her drawer, 2 pairs of black socks, and 5 pairs of white socks. What is the minimum number of pairs she must remove from the drawer to ensure that she has a pair of each color?

A. 3
B. 5
C. 7
D. 9
E. 10

Percent and Ratio

1. If a discount of 25% off the retail price of a desk saves Mark $45, how much did he pay for the desk?

  A. $135
  B. $160
  C. $180
  D. $210
  E. $215

2. A customer pays $1,100 in state taxes on a newly purchased car. What is the value of the car if state taxes are 8.9% of the value?

  A. $9,765.45
  B. $10,876.90
  C. $12,359.55
  D. $14,345.48
  E. $15,745.45

3. How many years does Steven need to invest his $3,000 at 7% to earn $210 in simple interest?

  A. 1 year
  B. 2 years
  C. 3 years
  D. 4 years
  E. 5 years

4. Sabrina's boss states that she will increase Sabrina's salary from $12,000 to $14,000 per year if she enrolls in business courses at a local community college. What percent increase in salary will result from Sabrina taking the business courses?

    A. 15%

    B. 16.7%

    C. 17.2%

    D. 85%

    E. 117%

5. 35% of what number is 70?

    A. 100

    B. 110

    C. 150

    D. 175

    E. 200

6. What number is 5% of 2000?

    A. 50

    B. 100

    C. 150

    D. 200

    E. 250

7. What percent of 90 is 27?

    A. 15%

    B. 20%

    C. 30%

    D. 33%

    E. 41%

8. Jim works for $15.50 per hour for a health care facility. He is supposed to get a 75 cent per hour raise at one year of service. What will his percent increase in hourly pay be?

    A. 2.7%

    B. 3.3%

    C. 133%

    D. 4.8%

    E. 105%

9. If 45 is 120% of a number, what is 80% of the same number?

    A. 30

    B. 32

    C. 36

    D. 38

    E. 41

10. How long will Lucy have to wait before her $2,500 invested at 6% earns $600 in simple interest?

    A. 2 years

    B. 3 years

    C. 4 years

    D. 5 years

    E. 6 years

11. What is 35% of a number if 12 is 15% of a number?

    A. 5

    B. 12

    C. 28

    D. 33

    E. 62

12. A computer is on sale for $1600, which is a 20% discount off the regular price. What is the regular price?

    A. $1800
    B. $1900
    C. $2000
    D. $2100
    E. $2200

13. A car dealer sells a SUV for $39,000, which represents a 25% markup over the dealer's cost. What was the cost of the SUV to the dealer?

    A. $29,250
    B. $31,200
    C. $32,500
    D. $33,800
    E. $33,999

14. After having to pay increased income taxes this year, Edmond has to sell his BMW. Edmond bought the car for $49,000, but he sold it for a 20% loss. What did Edmond sell the car for?

    A. $24,200
    B. $28,900
    C. $35,600
    D. $37,300
    E. $39,200

15. At a company fish fry, ½ in attendance are employees. Employees' spouses are 1/3 of the attendance. What is the percentage of the people in attendance who are not employees or employee spouses?

    A. 10.5%
    B. 16.7%
    C. 25%
    D. 32.3%

Basic Reading Comprehension

Questions 1 through 7 refer to the following passage:

In the 16th century, an age of great marine and terrestrial exploration, Ferdinand Magellan led the first expedition to sail around the world. As a young Portuguese noble, he served the king of Portugal, but he became involved in the quagmire of political intrigue at court and lost the king's favor. After he was dismissed from service by the king of Portugal, he offered to serve the future Emperor Charles V of Spain.

A papal decree of 1493 had assigned all land in the New World west of 50 degrees W longitude to Spain and all the land east of that line to Portugal. Magellan offered to prove that the East Indies fell under Spanish authority. On September 20, 1519, Magellan set sail from Spain with five ships. More than a year later, one of these ships was exploring the topography of South America in search of a water route across the continent. This ship sank, but the remaining four ships searched along the southern peninsula of South America. Finally they found the passage they sought near 50 degrees S latitude. Magellan named this passage the Strait of All Saints, but today it is known as the Strait of Magellan.

One ship deserted while in this passage and returned to Spain, so fewer sailors were privileged to gaze at that first panorama of the Pacific Ocean. Those who remained crossed the meridian now known as the International Date Line in the early spring of 1521 after 98 days on the Pacific Ocean. During those long days at sea, many of Magellan's men died of starvation and disease.

Later, Magellan became involved in an insular conflict in the Philippines and was killed in a tribal battle. Only one ship and 17 sailors under the command of the Basque navigator Elcano survived to complete the westward journey to Spain and thus prove once and for all that the world is round, with no precipice at the edge.

1. The 16th century was an age of great _____ exploration.

A. cosmic
B. land
C. mental
D. common man
E. None of the above

2. Magellan lost the favor of the king of Portugal when he became involved in a political _____.

A. entanglement
B. discussion
C. negotiation
D. problem
E. None of the above

3. The Pope divided New World lands between Spain and Portugal according to their location on one side or the other of an imaginary geographical line 50 degrees west of Greenwich that extends in a _____ direction.

A. north and south
B. crosswise
C. easterly
D. south east
E. north and west

4. One of Magellan's ships explored the _____ of South America for a passage across the continent.

A. coastline
B. mountain range
C. physical features
D. islands
E. None of the above

5. Four of the ships sought a passage along a southern _____.

A. coast
B. inland
C. body of land with water on three sides
D. border
E. Answer not available

6. The passage was found near 50 degrees S of _____.

A. Greenwich
B. The equator
C. Spain
D. Portugal
E. Madrid

7. In the spring of 1521, the ships crossed the _____ now called the International Date Line.

A. imaginary circle passing through the poles
B. imaginary line parallel to the equator
C. area
D. land mass
E. Answer not available

The following passage refers to questions 8 through 14.

Marie Curie was one of the most accomplished scientists in history. Together with her husband, Pierre, she discovered radium, an element widely used for treating cancer, and studied uranium and other radioactive substances. Pierre and Marie's amicable collaboration later helped to unlock the secrets of the atom.

Marie was born in 1867 in Warsaw, Poland, where her father was a professor of physics. At an early age, she displayed a brilliant mind and a blithe personality. Her great exuberance for learning prompted her to continue with her studies after high school. She became disgruntled, however, when she learned that the university in Warsaw was closed to women. Determined to receive a higher education, she defiantly left Poland and in 1891 entered the Sorbonne, a French university, where she earned her master's degree and doctorate in physics.

Marie was fortunate to have studied at the Sorbonne with some of the greatest scientists of her day, one of whom was Pierre Curie. Marie and Pierre were married in 1895 and spent many productive years working together in the physics laboratory. A short time after they discovered radium, Pierre was killed by a horse-drawn wagon in 1906. Marie was stunned by this horrible misfortune and endured heartbreaking anguish. Despondently she recalled their close relationship and the joy that they had shared in scientific research. The fact that she had two young daughters to raise by herself greatly increased her distress.

Curie's feeling of desolation finally began to fade when she was asked to succeed her husband as a physics professor at the Sorbonne. She was the first woman to be given a professorship at the world-

famous university. In 1911 she received the Nobel Prize in chemistry for isolating radium. Although Marie Curie eventually suffered a fatal illness from her long exposure to radium, she never became disillusioned about her work. Regardless of the consequences, she had dedicated herself to science and to revealing the mysteries of the physical world.

8. The Curies' _____ collaboration helped to unlock the secrets of the atom.

A. friendly
B. competitive
C. courteous
D. industrious
E. chemistry

9. Marie had a bright mind and a _____ personality.

A. strong
B. lighthearted
C. humorous
D. strange
E. envious

10. When she learned that she could not attend the university in Warsaw, she felt _____.

A. hopeless
B. annoyed
C. depressed
D. worried
E. None of the above

11. Marie _____ by leaving Poland and traveling to France to enter the Sorbonne.

A. challenged authority
B. showed intelligence
C. behaved
D. was distressed
E. Answer not available

12. _____ she remembered their joy together.

A. Dejectedly
B. Worried
C. Tearfully
D. Happily
E. Irefully

13. Her _____ began to fade when she returned to the Sorbonne to succeed her husband.

A. misfortune
B. anger
C. wretchedness
D. disappointment
E. ambition

14. Even though she became fatally ill from working with radium, Marie Curie was never _____.

A. troubled
B. worried
C. disappointed
D. sorrowful
E. disturbed

The following passage refers to questions 15 through 19.

Mount Vesuvius, a volcano located between the ancient Italian cities of Pompeii and Herculaneum, has received much attention because of its frequent and destructive eruptions. The most famous of these eruptions occurred in A.D. 79.

The volcano had been inactive for centuries. There was little warning of the coming eruption, although one account unearthed by archaeologists says that a hard rain and a strong wind had disturbed the celestial calm during the preceding night. Early the next morning, the volcano poured a huge river of molten rock down upon Herculaneum, completely burying the city and filling the harbor with coagulated lava.

Meanwhile, on the other side of the mountain, cinders, stone and ash rained down on Pompeii. Sparks from the burning ash ignited the combustible rooftops quickly. Large portions of the city were destroyed in the conflagration. Fire, however, was not the only cause of destruction. Poisonous

sulfuric gases saturated the air. These heavy gases were not buoyant in the atmosphere and therefore sank toward the earth and suffocated people.

Over the years, excavations of Pompeii and Herculaneum have revealed a great deal about the behavior of the volcano. By analyzing data, much as a zoologist dissects an animal specimen, scientists have concluded that the eruption changed large portions of the area's geography. For instance, it turned the Sarno River from its course and raised the level of the beach along the Bay of Naples. Meteorologists studying these events have also concluded that Vesuvius caused a huge tidal wave that affected the world's climate.

In addition to making these investigations, archaeologists have been able to study the skeletons of victims by using distilled water to wash away the volcanic ash. By strengthening the brittle bones with acrylic paint, scientists have been able to examine the skeletons and draw conclusions about the diet and habits of the residents. Finally, the excavations at both Pompeii and Herculaneum have yielded many examples of classical art, such as jewelry made of bronze, which is an alloy of copper and tin. The eruption of Mount Vesuvius and its tragic consequences have provided everyone with a wealth of data about the effects that volcanoes can have on the surrounding area. Today, volcanologists can locate and predict eruptions, saving lives and preventing the destruction of other cities and cultures.

15. Herculaneum and its harbor were buried under _____ lava.

A. liquid
B. solid
C. flowing
D. gas
E. Answer not available

16. The poisonous gases were not _____ in the air.

A. able to float
B. visible
C. able to evaporate
D. invisible
E. able to condense

17. Scientists analyzed data about Vesuvius in the same way that a zoologist _____ a specimen.

A. describes in detail
B. studies by cutting apart
C. photographs
D. chart
E. Answer not available

18. _____ have concluded that the volcanic eruption caused a tidal wave.

A. Scientists who study oceans
B. Scientists who study atmospheric conditions
C. Scientists who study ash
D. Scientists who study animal behavior
E. Answer not available in article

19. Scientists have used _____ water to wash away volcanic ash from the skeletons of victims.

A. bottled
B. volcanic
C. purified
D. sea
E. fountain

Reading for the Main Idea

Read the passage below and answer question 1.

Americans have always been interested in their Presidents' wives. Many First Ladies have been remembered because of the ways they have influenced their husbands. Other First Ladies have made the history books on their own.

At least two First Ladies, Bess Truman and Lady Bird Johnson, made it their business to send signals during their husbands' speeches. When Lady Bird Johnson thought her husband was talking too long, she wrote a note and sent it up to the platform. It read, "It's time to stop!" And he did. Once Bess Truman didn't like what her husband was saying on television, so she phoned him and said, "If you can't talk more politely than that in public, you come right home."

Abigail Fillmore and Eliza Johnson actually taught their husbands, Millard Fillmore and Andrew Johnson, the thirteenth and seventeenth Presidents. A schoolteacher, Abigail eventually married her pupil, Millard. When Eliza Johnson married Andrew, he could not read or write, so she taught him herself.

It was First Lady Helen Taft's idea to plant the famous cherry trees in Washington, D. C. Each spring these blossoming trees attract thousands of visitors to the nation's capital. Mrs. Taft also influenced the male members of her family and the White House staff in a strange way: she convinced them to shave off their beards!

Shortly after President Woodrow Wilson suffered a stroke, Edith Wilson unofficially took over most of the duties of the Presidency until the end of her husband's term. Earlier, during World War I, Mrs. Wilson had sheep brought onto the White House lawn to eat the grass. The sheep not only kept the lawn mowed, but provided wool for an auction sponsored by the First Lady. Almost $100,000 was raised for the Red Cross.

Dolly Madison saw to it that a magnificent painting of George Washington was not destroyed during the War of 1812. As the British marched toward Washington, D. C., she remained behind to rescue the painting, even after the guards had left. The painting is the only object from the original White House that was not burned.

One of the most famous First Ladies was Eleanor Roosevelt, the wife of President Franklin D. Roosevelt. She was active in political and social causes throughout her husband's tenure in office. After his death, she became famous for her humanitarian work in the United Nations. She made life better for thousands of needy people around the world.

1. What is the main idea of this passage?

A. The Humanitarian work of the First Ladies is critical in American government.
B. Dolly Madison was the most influential president's wife.
C. Eleanor Roosevelt transformed the First Lady image.
D. The First Ladies are important figures in American culture.
E. The First Ladies are key supporters of the Presidents.

Read the passage below and answer question 2.

Of the many kinds of vegetables grown all over the world, which remains the favorite of young and old alike? The potato, of course.

Perhaps you know them as "taters," "spuds," or "Kennebees," or as "chips," "Idahoes," or even "shoestrings." No matter, a potato by any other name is still a potato- the world's most widely grown

vegetable. As a matter of fact, if you are an average potato eater, you will put away at least 100 pounds of them each year.

That's only a tiny portion of the amount grown every year, however. Worldwide, the annual potato harvest is over 6 billion bags. Each bag contains 100 pounds of potatoes, some of them as large as four pounds each. Here in the United States, farmers fill about 400 million bags a year. That may seem like a lot of "taters," but it leaves the United States a distant third among world potato growers. Polish farmers dig up just over 800 million bags a year, while the Russians lead the world with nearly 1.5 billion bags.

The first potatoes were grown by the Incas of South America, more than 400 years ago. Their descendants in Ecuador and Chile continue to grow the vegetable as high as 14,000 feet up in the Andes Mountains. (That's higher than any other food will grow.) Early Spanish and English explorers shipped potatoes to Europe, and they found their way to North America in the early 1600s.

People eat potatoes in many ways-baked, mashed, and roasted, to name just three. However, in the United States most potatoes are devoured in the form of French fries. One fast-food chain alone sells more than $1 billion worth of fries each year. No wonder, then, that the company pays particular attention to the way its fries are prepared.

Before any fry makes it to the people who eat at these popular restaurants, it must pass many separate tests. Fail any one of these tests and the potato is rejected. To start with, only Russet Burbank potatoes are used. These Idaho potatoes have less water content than other kinds, which can have as much as 80 percent water. Once cut into "shoestrings" shapes, the potatoes are partly fried in a secret blend of oils, sprayed with liquid sugar to brown them, steam dried at high heat, then flash frozen for shipment to individual restaurants.

Before shipping, every shoestring is measured. Forty percent of a batch must be between two and three inches long. Another 40 percent has to be over three inches. What about the 20 percent that are left in the batch? Well, a few short fries in a bag are okay, it seems.

So, now that you realize the enormous size and value of the potato crop, you can understand why most people agree that this part of the food industry is no "small potatoes."

2. What is the main idea of this passage?

A. Potatoes from Ireland started the Potato Revolution.
B. The average American eats 50 pounds of potatoes a year.
C. French fries are made from potatoes.
D. Potatoes are a key vegetable in America.
E. The various terms for potatoes have a long history.

Advanced Reading Comprehension

Refer to the following passage for questions 1 through 5.

In 1892, the Sierra Club was formed. In 1908, an area of coastal redwood trees north of San Francisco was established as Muir Woods National Monument. In the Sierra Nevada Mountains, a walking trail from Yosemite Valley to Mount Whitney was dedicated in 1938. It is called the John Muir Trail.

John Muir was born in 1838 in Scotland. His family name means "moor," which is a meadow full of flowers and animals. John loved nature from the time he was small. He also liked to climb rocky cliffs and walls.

When John was 11 years old, his family moved to the United States and settled in Wisconsin. John was good with tools and soon became an inventor. He first invented a model of a sawmill. Later, he invented an alarm clock that would cause the sleeping person to be tipped out of bed when the timer sounded.

Muir left home at an early age. He took a 1,000-mile walk south to the Gulf of Mexico in 1867and 1868. Then he sailed for San Francisco. The city was too noisy and crowded for Muir, so he headed inland for the Sierra Nevadas.

When Muir discovered the Yosemite Valley in the Sierra Nevadas, it was as if he had come home. He loved the mountains, the wildlife, and the trees. He climbed the mountains and even climbed trees during thunderstorms in order to get closer to the wind. He put forth the theory in the late 1860s that the Yosemite Valley had been formed through the action of glaciers. People ridiculed him. Not until 1930 was Muir's theory proven correct.

Muir began to write articles about the Yosemite Valley to tell readers about its beauty. His writing also warned people that Yosemite was in danger from timber mining and sheep ranching interests. In 1901, Theodore Roosevelt became president of the United States. He was interested in conservation. Muir took the president through Yosemite, and Roosevelt helped get legislation passed to create Yosemite National Park in 1906.

Although Muir won many conservation battles, he lost a major one. He fought to save the Hetch Hetchy Valley, which people wanted to dam in order to provide water for San Francisco. In late 1913, a bill was signed to dam the valley. Muir died in 1914. Some people say losing the fight to protect the valley killed Muir.

1. What happened first?

A. The Muir family moved to the United States.
B. Muir Woods was created.
C. John Muir learned to climb rocky cliffs.
D. John Muir walked to the Gulf of Mexico.
E. John Muir visited along the east coast.

2. When did Muir invent a unique form of alarm clock?

A. While the family still lived in Scotland.
B. After he sailed to San Francisco.
C. After he traveled in Yosemite.
D. While the Muir family lived in Wisconsin.
E. After he took the long walk.

3. What did John Muir do soon after he arrived in San Francisco?

A. He ran outside during an earthquake.
B. He put forth a theory about how Yosemite was formed.
C. He headed inland for the Sierra Nevadas.
D. He began to write articles about the Sierra Nevadas.
E. He wrote short stories for the local newspaper.

4. When did John Muir meet Theodore Roosevelt?

A. Between 1901 and 1906
B. Between 1838 and 1868
C. Between 1906 and 1914
D. Between 1868 and 1901
E. Between 1906 and 1907

5. What happened last?

A. John Muir died.
B. John Muir Trail was dedicated.
C. Muir's glacial theory was proven.
D. The Sierra Club was formed.
E. John's family visited him.

Refer to the following passage for questions 6 through 9.

When using a metal file, always remember to bear down on the forward stroke only. On the return stroke, lift the file clear of the surface to avoid dulling the instrument's teeth. Only when working on very soft metals is it advisable to drag the file's teeth slightly on the return stroke. This helps clear out metal pieces from between the teeth.

It is best to bear down just hard enough to keep the file cutting at all times. Too little pressure uses only the tips of the teeth, while too much pressure can chip the teeth. Move the file in straight lines across the surface. Use a vise to grip the work so that your hands are free to hold the file. Protect your hands by equipping the file with a handle. Buy a wooden handle and install it by inserting the pointed end of the file into the handle hole.

6. These directions show you how to...

A. Work with a hammer.
B. Use a file.
C. Polish a file.
D. Oil a vise.
E. Repair shop tools.

7. When using a file...

A. Always bear down on the return stroke.
B. Move it in a circle.
C. Remove the handle.
D. Press down on the forward stroke.
E. Wear protective gloves.

8. When working on soft metals, you can...

A. Remove the handle.
B. Clear metal pieces from the teeth.
C. Bear down very hard on the return stroke.
D. File in circles.
E. Strengthen them with added wood.

9. Protect your hands by...

A. Dulling the teeth.
B. Dragging the teeth on the backstroke.
C. Using a vise.
D. Installing a handle.
E. Wearing safety gloves.

Answers and Explanations

Basic Algebra

1. A: The following proportion may be written: $1/p=x/5$. Solving for the variable, x, gives $xp = 5$, where $x=5/p$. So, Lynn can type $5/p$ pages, in 5 minutes.

2. A: Sally can paint 1/4 of the house in 1 hour. John can paint 1/6 of the same house in 1 hour. In order to determine how long it will take them to paint the house, when working together, the following equation may be written: $1/4\ x+1/6\ x=1$. Solving for x gives $5/12\ x=1$, where $x = 2.4$ hours, or 2 hours, 24 minutes.

3. D: Sale Price = $450 - 0.15($450) = $382.50, Employee Price = $382.50 - 0.2($382.50) = $306

4. D: $12,590 = Original Price - 0.2(Original Price) = 0.8(Original Price), Original Price = $12,590/0.8 = $15,737.50

5. A: In order to solve for A, both sides of the equation may first be multiplied by 3. This is written as $3(^{24}/3)=3(8+4A)$ or $2A=24+12A$. Subtraction of $12A$ from both sides of the equation gives $-10A=24$. Division by -10 gives $A = -2.4$.

6. A: Three equations may initially be written to represent the given information. Since the sum of the three ages is 41, we may write, $l + s + j = 41$, where l represents Leah's age, s represents Sue's age, and j represents John's age. We also know that Leah is 6 years older than Sue, so we may write the equation, $l = s + 6$. Since John is 5 years older than Leah, we may also write the equation, $j = l + 5$. The expression for l, or s + 6, may be substituted into the equation, $j = l + 5$, giving $j = s + 6 + 5$, or $j = s + 11$. Now, the expressions for l and j may be substituted into the equation, representing the sum of their ages. Doing so gives: $s + 6 + s + s + 11 = 41$, or $3s = 24$, where $s = 8$. Thus, Sue is 8 years old.

7. E: Simple interest is represented by the formula, $I = Prt$, where P represents the principal amount, r represents the interest rate, and t represents the time. Substituting $4,000 for P, 0.06 for r, and 5 for t gives $I = (4000)(0.06)(5)$, or $I = 1,200$. So, he will receive $1,200 in interest.

8. A: $670 = Cost + 0.35(Cost) = 1.35(Cost), Cost = $670/1.35 = $496.30

9. D: The amount of taxes is equal to $55*0.003, or $0.165. Rounding to the nearest cent gives 17 cents.

10. C: The GPA may be calculated by writing the expression, $((3*2)+(4*3)+(2*4)+(3*3)+(4*1))/13$, which equals 3, or 3.0.

11. C: From 8:15 A.M. to 4:15 P.M., he gets paid $10 per hour, with the total amount paid represented by the equation, $10*8=$80. From 4:15 P.M. to 10:30 P.M., he gets paid $15 per hour, with the total amount paid represented by the equation, $15*6.25=$93.75. The sum of $80 and $93.75 is $173.75, so he was paid $173.75 for 14.25 hours of work.

12. D: If she removes 13 jellybeans from her pocket, she will have 3 jellybeans left, with each color represented. If she removes only 12 jellybeans, green or blue may not be represented.

13. A: The value of z may be determined by dividing both sides of the equation, $r=5z$, by 5. Doing so gives $r/5=z$. Substituting $r/5$ for the variable, z, in the equation, $15z=3y$, gives $15(r/5)=3y$. Solving for y gives $r = y$.

14. A: 50 cents is half of one dollar, thus the ratio is written as half of 300, or 150, to x. The equation representing this situation is $300/x*1/2=150/x$.

15. B: The following proportion may be used to determine how much Lee will make next week: $22/132=15/x$. Solving for x gives $x = 90$. Thus, she will make $90 next week, if she works 15 hours.

Advanced Algebra

1. **D:** The average of the three numbers may be written as $(Z+Y+x)/3=V$, where x represents the value of the third number. Solving for x will give the value of the remaining number. Multiplying both sides of the equation by 3 gives $Z + Y + x = 3V$. Subtraction of Z and Y, from both sides of the equation gives $x = 3V - Z - Y$. The value of the remaining number is $3V - Z - Y$.

2. **B:** The intersection of the graphs of the equations, $y = 6x$ and $y = 10x - 30$, represents the time (x) and distance (y), where the second cyclist catches up with the first cyclist. The point of intersection is $(7\frac{1}{2}, 45)$. Thus, after $7\frac{1}{2}$ hours from the time the first cyclist starts and $4\frac{1}{2}$ hours from the time the second cyclist starts, the second cyclist catches up with the first cyclist.

3. **B:** The amount of time it takes the three of them to fill the pool may be represented by the equation, $^1/_{30}+^1/_{45}+^1/_{90}=^1/_t$, where t represents the number of minutes. Solving for t gives $t = 15$. Thus, after 15 minutes, the three of them will fill the pool, when working together.

4. E: The correct solution is $t = -8$. When adding t to $-5t$, it looks like she forgot to include the negative sign on $4t$, which gave an incorrect solution of positive 8.

5. B: Simple interest is represented by the formula, $I = Prt$, where I represents the interest amount, P represents the principal, r represents the interest rate, and t represents the time. Substituting 2,500 for I, 10,000 for P, and 5 for t, gives the equation, $2{,}500 = 10{,}000(r)(5)$. Thus, $r = 0.05$, or 5%.

6. E: $\sqrt{2}$ has a decimal expansion that does not terminate or repeat (1.414213562...). Thus, it is an irrational number.

7. D: The following proportion may be used to solve the problem: $^8/_{100}=^x/_{5000}$. Solving for x gives $x = 400$. Thus, 400 women, out of the random sample of 5,000, will likely have been married 2 or more times.

8. E: The following equation may be used to find the speed at which he needs to travel: $28/x=1/2$. Thus, $x = 56$. He needs to travel 56 mph, in order to make it to the meeting on time.

9. A: The amount of time it takes the three of them to mix the 20 drinks may be represented by the equation, $1/5+1/10+1/15=1/t$, where t represents the number of minutes. Solving for t gives $t=30/11$, which equals 2.73 minutes. There are 60 seconds in a minute, so multiply 60 by 2.73 minutes to get 163.8 seconds. Divide that by 60, and it comes to approximately 2 minutes and 44 seconds.

10. B: The amount of time it will take the three of them to finish the job, when working together, may be modeled by the equation, $1/4+1/6+1/2=1/t$, where t represents the number of days. Solving for t gives $t=12/11$, or 1.(09). Thus, it will take the three of them 1.09 days to finish the job.

Analogies 1

. D: Denting is minor damage and destroying is major; dripping is minor liquid flow and gushing is major. Cry and laugh (A) are antonyms. Curl and roll (B), stream and tributary (C), and bend and angle (E) are all pairs of synonyms.

2. B: Walking is a movement of the legs and chewing is a movement of the mouth. Eyes may gleam (A), but this is not a movement. Dress (C) is a whole, of which hem is part; Cover (D) is part of the whole, book. There is an expression, "Keep your nose to the grindstone;" but grind is not a movement of/upon the nose (E).

3. B: Enfranchise is to set free/liberate, and slavery is the opposite-i.e. to enslave/confine. Both sets are antonyms. Equation is part of mathematics (A). Bondage and subjugation (C) are synonyms (for each other and slavery). Appeasement and unreasonable (D) are unrelated. Anatomy and physiology (E) are related subjects.

4. C: The Union Jack (British flag) is part of vexillology, the study of flags; gymnosperms are part of botany, the study of plants. Toad is not part of ornithology (A), the study of birds. Turtle is not part of microbiology (B), the study of microscopic organisms. Friend is not part of home economics (D), the study of cooking, sewing, and other home skills. Algae, plants, are not part of zoology (E), the study of animals.

5. D: Topazes are yellow and amethysts are purple. Carats (A) are measures of the weight of diamonds, not their color. Jewelers (B) inspect gems for clarity, a quality other than color. Sapphires (C) are blue, not red. Amber and blue (E) are two different colors; neither is a gem.

6. D: Lumens measure brightness and inches measure length. Candles do not measure light (A) but emit it. Density does not measure darkness (B) but may create it. Nickel does not measure metal (C) but is a type of metal. Color does not measure hue (E); these are synonyms.

7. D: Liquid causes maceration as weather causes erosion: both break things down. Gas does not cause sublimation (A) but is subject to it, as humidity is subject to evaporation (B). Trail and path (C) are synonyms. Distraction interferes with a decision (E), rather than causing it.

8. E: One who is clumsy may botch a job; one who is lazy may shirk work. One who is wicked may or may not necessarily insinuate (A); a better adjective for insinuating something might be sly or subtle. One who is strict does not pamper (B), but the opposite. One who is willful does not heed (C) warnings/directions. Clever, i.e. ingenious or smart, is unrelated to eradicate (D), to eliminate.

9. B: A fugitive flees; a braggart boasts/brags. A parasite does not foster (A) or promote anything, but lives off another. A sage is one who is wise, not one who stifles (C), i.e. suppresses, anything. A bystander does not procure (D) or obtain anything, but stands by and may observe an event. A firebrand incites others to action but does not quibble (E), i.e. dispute, anything.

10. D: Chronological means in order of time, as ordinal means in order in place. Virtual means essential, implicit, practical, or almost; not in order of truth (A). Abnormal means not normal and not in order of value (B). Marginal means minimal or peripheral, not in order of knowledge (C). Coincidental means by chance/occurring together, not in order of health (E).

11. C: Soot (ash/carbon) makes things grimy (dirty) as rain makes things sodden (soaked). Frost does not make things transparent (A) or clear. Sunshine does not make things fruitless (B) or useless/unproductive. A pall or cloud of gloom does not make things gaudy (D) or bright. Dust does not make things radiant (E) or glowing.

12. A: Morbid and unfavorable are "bad" synonyms, as reputable and favorable are "good" synonyms. Maternal refers to motherhood and is not unfavorable (B). Disputatious means

argumentative and is not favorable (C). Vigilant means watchful and is not unfavorable. Lax means slack or remiss and is not favorable (E).

13. C: One who is sullen (morose) will brood (mope), as one who is docile (compliant) will obey. One who is lethargic (A) lacks energy/motivation and will not cavort (frolic). One who is regal (royal/noble) is proud and will not cringe (B), i.e. cower/recoil. One who is poised is self-assured and socially adroit, hence unlikely to blunder (D), i.e. commit a social error/faux pas. One who is despondent is depressed/despairing and unlikely to laugh (E).

14. D: An author is expected to be literate, i.e. well-read, as a judge is expected to be impartial, i.e. objective. A cynic is NOT expected to be gullible (A), i.e. easily fooled. A hothead acts rashly, not prudently (B) or judiciously. A saint is highly reputable, not notorious (C), i.e. disreputable. A doctor is not expected to be especially fallible (E), i.e. prone to error.

15. E: As something massive has great bulk, something gigantic has great size. Ultimate means final or extreme; magnitude means large amount or importance. Trivial means unimportant/having the opposite of importance (B). Anonymous means unknown, while luster means shine or brilliance. Interminable means unending; legacy means inheritance or heritage (D).

Antonyms

1. A: To dote on someone is to love him/her. An aversion is a dislike of someone/something, the best antonym. An antidote (B) is a counteracting remedy, as against poison. Foolish (C) means silly, not loving. (Do not confuse "doting"/loving with "dotage"/senility.) Creativity (D) is imagination, artistry, originality, ingenuity, etc. Daring (E) is boldness.

2. E: An imbroglio is a quarrel, often a complicated/entangled one. Harmony is the best antonym. Fight (A) is a synonym. Conclusion (B) is an end or a decision. Trust (C) is belief that someone is honest or dependable, or that something is true. Thankfulness (D) is gratitude.

3. B: To reminisce is to remember and/or relate or discuss memories. Its opposite is to forget. Ignore is the closest antonym here. To originate (A) is to begin. To create (C) is to make/produce. To reconvene (D) is to meet again, as a committee or group. To credit (D) is to attribute or ascribe something (to a person or thing).

4. B: To expedite is to get something done promptly. To dawdle, i.e. delay or waste time, is the best antonym. Dispatch (A) is to hurry or send speedily, a synonym for expedite. Precipitate (C) means to trigger, hurry, or speed and is another synonym. Overlook (D) means to miss or disregard. Creed (E) is a noun meaning belief, faith, or religion.

5. A: Onus means burden. Easement can mean relief or support and is thus the best antonym. (Easement also means legal access/right of way, as with land.) Capability (B) means competence. Obligation (C) means duty or responsibility and is a synonym for onus. Traction (D) means friction or resistance. Belief (E) means regarding as true, acceptance, faith, or conviction.

6. B: Squalor means poverty, filth, or wretchedness. Wealth, the opposite of poverty, is the best antonym. Impurity (A) is a near synonym. Consumption (C) can mean eating, use, or decay; decay is a synonym of squalor. Feces (D) are excrement, more related than opposite to squalor. Indigence (E) means poverty, another synonym.

7. B: Reticent means uncommunicative, quiet, or shy. Forward means outgoing or aggressive and is the best antonym. Tired is worn out or fatigued. Shy is a synonym of reticent. Drained means exhausted, depleted, or empty. Elegant means tastefully beautiful, graceful, fancy, refined, ingenious, or ingeniously simple.

8. A: Nexus means a connection or center. Separation is the best antonym. Connection (B) is a synonym. Respect (C) means others' admiration. Vinculum (D) means a bond or connection and is also a synonym for nexus. Distraction (E) means a state of having one's attention diverted, or a diversion or amusement.

9. C: Noisome means noxious, harmful, unhealthy, or offensive. Salubrious means beneficial, helpful, healthy, or wholesome and is the best antonym. Fetid (A) means rotten, rancid, foul, noxious, or offensive and is a synonym. Rank (B) is also a synonym for noisome or fetid. Pacific (D) means peaceful or appeasing and is not an exact antonym. Pestilent (E) means dangerous, harmful, or noxious-another synonym for noisome.

Averages and Rounding

1. **B:** When rounding the decimal to the nearest tens place, look to the digit that is one place to the right, or the ones place. Since the digit in the ones place is greater than 5, the number will be rounded up to the next 10, giving a rounded number of 910.

2. **C:** The weighted average may be written as (3·89)+(3·92)+(2·94)+(2·81)+(1·85)/11, which is approximately 88.9.

3. **D:** The average daily cost may be written as 5.43+5.43+3.54+3.54+7.89/5, which equals 5.17. The average daily cost was $5.17.

4. **C:** When rounding the decimal to the nearest hundredths place, look to the digit that is one place to the right, or the thousandths place. Since the digit in the thousandths place is less than 5, the digit in the hundredths place will remain. Thus, the rounded number is 1230.93.

5. A: The decimals of 45.5 and 67.9 should be subtracted from the decimal, 134.7. Doing so gives a difference of 21.3.

6. B: The absolute value of a number is the distance the number is from 0. The integer, -9, is 9 units from the whole number, 0. Thus, it has an absolute value of 9.

7. D: Since this list (already written in ascending order) has an even number of values, the median is the average of the two middle values. The average of 7 and 9 is 8, thus the median is 8.

8. E: Since there are 52 weeks and 4 seasons in a year and 31 days in January, the average may be written as 52+4+31/3, which equals 29.

9. C: The GPA may be written as (4·4)+(4·3)+(2·3)+(3·2)/13, where 13 represents the sum of the weights. Thus, the GPA is approximately 3.08.

10. A: The average is equal to the ratio of the amount spent to the number of days in a week. Thus, the average may be written as 28.49/7. He spent an average of $4.07 per day.

Basic Operations

1. C: Aligning the decimals at the decimal point and adhering to the same integer addition computation properties, the sum is equal to 109.41539.

2. C: Any number divided by 1 is equal to itself, thus 0.12 ÷ 1 = 0.12.

3. B: By first performing the computations within the parentheses, the expression may be rewritten as 3 × 2, which equals 6.

4. D: The product is 0, since the product of any number, or numbers, and 0, equals 0.

5. B: The division may be performed by first dividing 1.5 into 7.9 and then dividing 1.5 into 0.45. Doing so gives a quotient of 5.3

6. A: Addition of 7 to the integer, -32, shows a movement of 7 units to the right, giving a sum of -25.

7. B: The sum of the two negative integers will be negative. Starting at -37 on a number line and moving 47 units to the left, gives a sum of -84.

8. B: The percentage, 41%, may be converted to a decimal by moving the decimal point two places to the left. In other words, 41 is divided by 100 (or multiplied by 1/100), since one percent represents one-hundredth.

Commas

1. D: No error. There is a comma after the initial modifying prepositional phrase and after the first and second modifying prepositional phrases in the series of three. No comma belongs between an adjective and the noun it modifies (A), or between an auxiliary verb and verb (B). Omitting the second comma setting off the first modifying prepositional phrase (C) is wrong.

2. D: No error. A comma belongs between two consecutive adjectives modifying the same noun. A comma between verb and object (A) is incorrect. So is one between an adjective and the noun it modifies (B). Omitting a comma between two consecutive adjective (C) is incorrect.

3. A: The comma after "Nathan" is correct, but there should also be another comma before it. When an address to someone by name is inserted mid-sentence-here between subject and object-it should be set off by commas on both sides. There should not be a comma between auxiliary verb and verb (B). Having no commas to set off the inserted name (C) is incorrect.

4. B: There should be a comma between the street address and the city when stating a full address in sentence form (as well as between the city and state, as there is here). There should not be a comma between the verb and prepositional phrase (A), or between street number and street name (C).

5. C: A modifying phrase between subject and predicate should be set off by commas on both sides. Putting a comma between adverb and verb (A) or between object and preposition (B) is incorrect.

6. D: No error. The phrase modifying the subject is set off by commas both before, and after it. Removing the second comma (A) is incorrect. A comma between a noun and its modifying prepositional phrase [(B), (C)] is incorrect.

7. C: There should always be a comma between a village and country, city and state, state and country, or country and continent. There should not be a comma between the noun and modifying preposition (A), or between the subject and verb (B).

8. C: When a date is used in a modifying prepositional phrase before the subject and verb, it should have a comma after it (before subject-verb). There should not be a comma between a noun and modifying preposition (A) or between an article and the noun it modifies (B).

9. A: A comma should follow an interjection like "Oh" at the beginning of a sentence. (In some sentences, other punctuation like an exclamation point is acceptable.) A comma between subject and verb (B) is incorrect. A comma in the middle of an infinitive (C) is incorrect.

10. C: When a non-quotation clause/phrase is inserted in the middle of a quotation, it should be set off by commas on both sides. There should not be a comma between a noun and its modifying prepositional phrase (A), or between an adjective and the noun phrase it modifies (B).

Estimation and Sequences

1. **C:** The descending sequence is geometric, with a common ratio of 0.5.

2. **E:** 11^2=121, not 144.

3. **C:** The conversion formula is: C=(F-32)·5/9, where C represents degrees Celsius and F represents degrees Fahrenheit. Substituting 100.7 for F gives: C=(100.7-32)·5/9, which simplifies to C=68.7·5/9. Thus, the temperature, in Celsius, is approximately 38.2°.

4. **D:** The problem may be modeled by the equation, $0.25x = 8.75$. Solving for x gives $x = 35$. Since he thought he had 2 fewer quarters, he originally thought he had 33 quarters in his pocket.

5. **C:** The problem may be modeled by the following system of equations:(a=o+12@a+o=36). Substituting the expression for a, into the second equation, gives: o + 12 + o = 36. Solving for o gives o = 12. Thus, there are 12 oranges. Since there are 36 apples and oranges in all, there must be 24 apples.

6. **C:** The sequence, 9, 11, 13, 15, shows all odd integers, which are consecutive. The sum of 11 and 13 is indeed 24.

7. **B:** The sequence is a geometric sequence, with a common ratio of 2. Two times 48 is 96, thus the next number in the sequence is 96.

8. **B:** The number, 1, is rational, whole, and natural. A rational number is a number that terminates or repeats. A whole number is represented by the sequence, 0, 1, 2, 3, 4, …, while a natural number is a subset of the whole numbers, and is represented by the sequence, 1, 2, 3, 4,…

9. **E:** The sequence is a geometric sequence, with a common ratio of 1/2. Multiplication of 1/8 by 1/2 gives 1/16, which is the next number in the sequence.

10. **E:** The amount of sugar, needed in a cookie recipe, is best measured by the unit of cups, which is an appropriate measure of capacity.

Exponents

1. **A:** $10^4 = 10 \cdot 10 \cdot 10 \cdot 10$, or 10,000.

2. **C:** When multiplying terms with the same base, the exponents should be added. Thus, $10^4 \cdot 10^2 = 10^6$.

3. **D:** When dividing terms with the same base, the exponents should be subtracted. Thus, $x^5/x^2 = x^3$.

4. **D:** The decimal will be moved to the right 9 places. Thus 7 zeros will be added to the right of 823, giving 8,230,000,000.

5. **B:** Moving the decimal to the right of the digit, 8, gives the equivalent expression, 8.3×10^4, since there are 4 digits to the right of the 8.

6. **B:** Moving the decimal to the right of the 8 gives 8.75×10^{-3}, since the decimal must be moved 3 places to the right.

Fractions and Square Roots

1. **C:** The figure shows 2 completely shaded circles, plus 1/8 more than 4/8 shaded on the third circle. Thus, the figure represents the mixed number, 2 5/8.

2. **B:** The circle shows 1/8 more than 4/8, which represents 5/8.

3. **C:** The fraction, 12/18, is not equivalent to the fraction, 3/4, since the fractions do not represent the same ratio. The denominator for Choice C would need to be 16, for the two fractions to be equivalent.

4. **B:** The sum equals 0.90, which may also be written as 9/10.

5. **C:** The ten thousandths place is located 4 places to the right of the decimal.

6. **C:** The square of the given fraction may be written as $25^2/9^2$, or 625/81, which equals 7 58/81.

7. **C:** The sum of 3/8 cup of sugar and 3/5 cup of sugar is 39/40 cup of sugar. 39/40 cup of sugar can be compared to 15/16 cup of sugar by finding a common denominator. Doing so shows that Sarah will need 78/80 cup of sugar, but only has 75/80 cup of sugar. Thus, she needs 3/80 cup of sugar.

8. **D:** The following proportion may be used to find the solution: $8/0.5 = x/7.75$. Solving for x gives $x = 124$. Thus, there are 124 ounces in 7 3/4 pounds.

9. E: The value does not change because the 3 in the numerator and the 3 in the denominator cancel. $3XZ/3Y=XZ/Y$.

10. B: 0.5% = 0.005, which may be written as 5/1000, which reduces to 1/200.

Geometry

1. E: The vertex is the point, formed by the two rays of an angle. Thus, H is the vertex of the angle.

2. C: $C=\pi d$. Substituting 8 for d gives $C=8\pi$, where C is approximately 25.13.

3. B: The area of a triangle may be found by using the formula, $A=1/2bh$, where b represents the base and h represents the height. Thus, the area may be written as $A=1/2(11)(6)$, or A = 33. The area of the triangle is 33 cm².

4. D: The sum of the angles, formed by the perpendicular rays is 360°, thus the curved arrow represents an angle measure that is equal to the difference of 360° and 90°, or 270°.

5. B: Since angles A and B are supplementary, the measure of angle B is equal to the difference of 180° and 135°, or 45°.

Graphs

1. E: The area of the circle may be found by using the formula, $A=\pi r^2$. Since the square has a diameter of 4, the circle has a radius of 2. Substituting 2 for r, into the formula above, gives $A=\pi(2)^2$, or $A=4\pi$. Thus, the area of the circle is approximately 12.57 square units.

2. B: The area of the square is equal to 7^2, or 49, square units. The area of the circle may be represented as $\pi(3.5)^2$, or 12.25π, which is approximately 38.48 square units. The area of the shaded portion of the figure equals the difference of 49 square units and 38.48 square units, or 10.52 square units.

3. C: The point represents the x-value of 3 and the y-value of -4, thus the ordered pair may be written as (3, -4).

4. C: The average may be written as (35+40+50+55)/4, which equals 45.

5. D: Since each rattle represents the delivery of 10 babies, 5 1/2 rattles represents the delivery of 55 babies.

6. E: Delivery of 85 babies would be represented by 8 whole rattles and 1/2 of another rattle, since 8 1/2 · 10=85.

7. A: The number of SUVs sold is equal to 0.13 × 23,000, or 2,990.

8. C: If 7,650 trucks are sold, which constitutes 17% of the total number of vehicles sold, then the total number of vehicles sold may be determined by solving the equation, $7650 = 0.17x$. Dividing both sides of the equation by 0.17 gives 45,000.

9. B: The total number of vehicles sold may be determined by solving the following equation for x: $0.25x = 3,750$. Thus, 15,000 vehicles were sold. The number of 4-door sedans is equal to the product of 0.33 and 15,000, or 4,950.

10. B: The weight increased from 8.5 pounds to 9.25 pounds, showing an increase of 0.75 pounds. The number of pounds may be converted to ounces by writing and solving the following proportion: $0.75/x = 1/16$. Thus, the infant gained 12 ounces during the first month of life.

Intermediate Grammar

1. B: When referring to a person, use "who," not "that" [(A), (D)] or "which" (C). The past perfect "had been" [(D), (E)] is inappropriate in this context: simple past "was ostracized" refers to the historical event itself. Past perfect would only be used with something identified as leading up to the past event, e.g. "...who had been refusing to reduce rent for years and finally was ostracized."

2. C: Present perfect (A) implies Suzuki is not still known thusly. Past perfect (B) implies he stopped being known thusly in the past. Also, "known" is less accurate than "seen": the former suggests fact; the latter connotes perception/view/opinion, the case here. Present progressive (D) is awkward and suggests the opinion is only current and short-term. "Has been" without "seen" (E) changes the meaning from public opinion to fact-and past, not present, fact.

3. E: "Rainiest" is the superlative form of the adjective "rainy." ("Rainier" is the comparative.) Using "most"/"more" plus the original adjective instead of its superlative/comparative form when it has one is incorrect with one-syllable adjectives and usually awkward with two-syllable adjectives.

4. B: When comparing two things/people, use the comparative (-er/more), not the superlative (-est/most), only used when comparing three or more. "Has been" (C) is only correct when sentence context warrants, e.g. "...has been the taller of the two for three years." Here it is extraneous. "Most tall" (D) is doubly incorrect: once for using superlative, not comparative; and again for using "most"(/"more") instead of "-est"(/"-er") with a one-syllable adjective. "More taller" (E) is an incorrect double/redundant comparative.

5. D: Though common, using "sold out" in active voice with "tickets" as the subject is undesirable since tickets cannot literally sell themselves, so passive voice is more appropriate. Also, past perfect "had been sold out" is more correct than simple past tense "were sold out" (C) since the selling out

preceded when the play came to town (past tense). "For" (E) instead of "far" in advance is the wrong preposition/word choice for the meaning and makes no sense.

6. C: Subject-verb agreement: The subject "origins" is plural, so the verb must agree with "are." The singular "is" (A) or "has been" (D) is incorrect. Present perfect "have been" (B) only applies if the context dictates it, e.g. "have been unknown until recently." Adding "now" (E) changes the meaning, implying they were previously known.

7. B: "Neither" is singular, so "expects" is correct. "Expect" (A) is plural. Present perfect "has expected" (C) is superfluous and awkward, as are present progressive "is expecting" (D) and past progressive "was expecting" (E). These would only apply if followed by (e.g.) "...until now" for (C) and (E) or "...until next year" (D).

8. E: "Any" can be singular or plural; in this context, plural is more appropriate. When asking questions with plural count nouns, use "any" as plural. For singular, "Has any one of the witnesses...?" is better. "Is" (B), "will" (C), and "are" (D) are not correct auxiliary verbs in past perfect with "been."

9. E: The past tense of "sink" is "sank." "Sunk" (A) is part of the present perfect ("has sunk"/"is sunk"/"has been sunk"- passive voice) and past perfect (had sunk"/"was sunk" (C)]/"had been sunk"- passive voice) tenses. "Did sink" (B) is awkward and unnecessary. "Did sank" (D) is incorrect: past-tense auxiliary verbs are never used together with past-tense main verbs (doubling).

10. D: An apostrophe is required in "who's," a contraction of "who is." No apostrophe (A) is incorrect. "Whose" (B) is the possessive (i.e. belonging to whom). Its irregular spelling differentiates it from the contraction "who's" (like "its" vs. "it's"). "Whose" is never spelled with a final apostrophe (E). "Who is" (C) is not incorrect, but expanding the contraction to full form avoids correctly identifying the contraction's correct spelling.

Advanced Grammar

1. B: The semicolon is incorrect punctuation here. With the coordinating conjunction "and," no punctuation is needed between the two gerunds. A comma is permissible to indicate David did not necessarily do both things simultaneously; however, semicolons are for separating two independent clauses, or separating dependent clauses/phrases containing internal commas.

2. A: "High School" is incorrect capitalization. These words are not names/proper nouns and should not be capitalized.

3. D: The singular form of the verb ("plays") disagrees with the plural noun subject ("Nurses"), representing incorrect grammar.

4. C: "Tonsels" is an incorrect spelling of the word "tonsils."

5. C: "Serine" is an incorrect spelling of the adjective "serene," meaning peaceful (indicated by sentence context), confusing it with the noun serine, meaning the amino acid.

6. B: Ending this question with a period is incorrect punctuation. It should end with a question mark.

7. C: "Bachalor" is incorrect spelling of "bachelor."

8. B: The comma is incorrect punctuation. No punctuation mark is needed here.

9. D: A singular predicate with a plural subject is incorrect subject-verb agreement, i.e. grammar.

10. A: The noun "dean" is not a name/proper noun, so the capitalization is incorrect.

Intermediate Math

1. **A:** The sum of the two given angles is 140°. The measure of the third angle is equal to the difference of 180° and 140°, or 40°.

2. **E:** The amount he will need for 3 desserts is equal to the product of 2 1/2 and 3, or 7 1/2.

3. **C:** Application of the 50% discount gives the expression, 320 - 0.50(320), which equals 160. Application of the additional 20% discount to this amount, gives the expression, 160 - 0.20(160), which equals 128. Thus, the sale price of the desk was $128.

4. **A:** 25% is larger than any of the percentages given for the other destinations, thus the beach is the most common destination.

5. **B:** The number of students going to the mountains is equal to the product of 0.12 and 500, which equals 60.

6. **E:** The following proportion may be written: $(1/4)/1=6/x$. Solving for x gives $x = 24$. Thus, there are 24 milliliters in 6 teaspoons.

7. **D:** The correct graph should show one ray, with a closed point on the integer, -2, which points to the left, and another ray, with a closed point on the integer, 3, which points to the right.

8. **E:** The following proportion may be written: $(1/4)/20=(3\ 1/2)/x$, which simplifies to $1/4\ x=70$, where $x = 280$. Thus, there are actually 280 miles between the two cities.

9. D: The new length may be represented by the expression, $L + 2$, while the new width may be represented by the expression, $W + 2$. Thus, the area is equal to the product of the two dimensions, or $(L + 2)(W + 2)$.

10. D: Removal of 9 pair will ensure that she has one of each color because all 3 colors will be represented. Removal of 7 pair may include only pairs of black and white socks, while not including a red pair.

Percent and Ratio

1. A: The original price of the desk may be found by solving the equation, $0.25x = 45$. Thus, $x = 180$. However, this is the original price of the desk. Since he saves $45, he pays $45 less, or $135.

2. C: The following equation may be used to find the value of the car: $1,100 = 0.089x$. Solving for x gives $x \approx 12,359.55$. Thus, the value of the car is $12,359.55.

3. A: The formula, $I = Prt$, represents the amount of interest earned, for a particular principal, interest rate, and amount of time. Substituting 210 for I, 3000 for P and 0.07 for r gives: $210 = 3000(0.07)t$. Solving for t gives $t = 1$. Thus, he will earn $210 in interest, after 1 year.

4. B: The percent increase may be modeled by the expression, $(14,000-12,000)/12,000$, which equals 16.7%.

5. E: The equation, $0.35x = 70$, may be used to solve the problem. Dividing both sides of the equation by 0.35 gives $x = 200$.

6. B: The problem may be modeled as $x = 0.05(2000)$. Thus, 100 is 5% of 2000.

7. C: The problem may be modeled as $90x = 27$. Dividing both sides of the equation by 90 gives $x = 0.3$ or 30%.

8. D: The percent increase may be modeled by the expression, $0.75/15.50$, which is approximately 0.048, or 4.8%.

9. A: The first part of the problem may be modeled with the equation, $45 = 1.2x$. Solving for x gives $x = 37.5$. 80% of 37.5 may be written as $0.80(37.5)$, which equals 30.

10. C: The formula, $I = Prt$, represents the amount of interest earned, for a particular principal, interest rate, and amount of time. Substituting 600 for I, 2500 for P and 0.06 for r gives: $600 = 2500(0.06)t$. Solving for t gives $t = 4$. Thus, she will have to wait 4 years to earn $600 in interest.

11. **C:** The second part of the problem may be modeled with the equation, $12 = 0.15x$. Solving for x gives $x = 80$. Thus, the number is 80. 35% of 80 may be written as $0.35(80)$, which equals 28.

12. **C:** The sale price of the computer is 80% of the regular price. Thus, the following equation may be used to solve the problem: $1600 = 0.80x$. Solving for x gives $x = 2000$. Thus, the regular price of the computer is $2000.

13. **B:** The following equation may be used to solve the problem: $0.25 = (39{,}000 - x)/x$. Multiplying both sides of the equation by x gives $0.25x = 39{,}000 - x$. Adding x to both sides of the equation gives $1.25x = 39{,}000$, where $x = 31{,}200$. Thus, the cost of the SUV to the dealer was $31,200.

14. **E:** The problem may be modeled by the expression, $49{,}000 - (0.20(49{,}000))$, which equals 39,200. Thus, he had to sell the car for $39,200.

15. **B:** The attendance of employees and spouses may be modeled as $1/2 + 1/3$, or $5/6$. Thus, $1/6$ of those, in attendance, who are not employees or spouses, is approximately 16.7%.

Basic Reading Comprehension

1. B: "Terrestrial" means land. No choice here offers a synonym for "marine," e.g. nautical/naval/water/seagoing, and no other choices match either marine or terrestrial.

2. A: "Quagmire" means literally a bog or marsh, and figuratively an involved situation difficult to escape; entanglement is a synonym, more specifically similar than the other choices.

3. A: Longitudes are imaginary geographical lines running north and south. Latitudes run east and west. The other choices do not equal either latitude or longitude in direction.

4. C: Topography means the physical features of a land mass. It does not mean coastline (A), mountain range (B), or islands (D).

5. C: A peninsula is a piece of land connected to the mainland by an isthmus and projecting into the ocean such that it is surrounded on three sides by water. A peninsula is not a coast (A); it is not found inland (B); and it is not a border (D).

6. B: The passage was found near 50 degrees S latitude. Latitudes are measured horizontally, in relation to the equator or central imaginary line, equidistant between the North and South Poles. Longitudes are measured vertically. Greenwich (A), the location of zero degrees longitude, adopted as the global standard, is both incorrect and never named in the passage. Spain (C), Portugal (D), and Madrid (E) in Spain are also incorrect.

7. A: Meridians are imaginary geographical circles intersecting the poles. Imaginary lines parallel to the equator (B) are latitudes. The International Date Line is a specific meridian, not an area (C). It is not a land mass (D) as it crosses both water and land.

8. A: "Amicable" means friendly. It does not mean competitive (B), i.e. oppositional, ambitious, or aggressive; courteous (C), i.e. polite; industrious (D), i.e. hard-working; or chemistry (E): their collaboration was in physics, but moreover, the passage specifically describes their collaboration as "amicable."

9. B: "Blithe" means light-hearted. It does not mean strong (A), humorous (B) or funny; strange (D), or envious (E).

10. B: "Disgruntled" means annoyed. It does not mean hopeless (A), depressed (C), or worried (D).

11. A: Marie challenged authority by going to study at the Sorbonne, because Warsaw's university did not admit women. The passage indicates this challenge by describing her "defiantly" leaving Poland for France; i.e., she was defying authority. The passage does not indicate she showed intelligence (B), "behaved" (C), or was distressed (D) or upset by her move.

12. A: A synonym for "despondently" is "dejectedly," meaning sadly, with despair or depression. The passage indicates this by describing Curie's emotional state as one of "heartbreaking anguish" over her husband's sudden accidental death. She is not described in this passage as worried (B) by her memories, or recalling them tearfully (C), happily (D), or irefully (E), i.e. angrily.

13. C: The closest synonym for the "feeling of desolation" (despair) described in the passage is wretchedness. Misfortune (A) or ill fate/luck is not as close. Anger (B) is a separate emotion from desolation. Disappointment (D) is also different from desolation, meaning feeling let-down rather than hopeless. Ambition (E) is drive to succeed or accomplish things. It was not Curie's ambition that faded upon returning to the Sorbonne but her depression.

14. C: "Disillusioned" means disappointed. It does not mean troubled (A), i.e. concerned or disturbed; worried (B) or anxious; sorrowful (D) or sad; or disturbed (E).

15. B: "Coagulated" means solidified. Liquid (A) is an opposite of solid. Flowing (C) assumes a liquid, not solid, state. Gas (D) is another opposite of solid. (Three states of matter, like volcanic material, are liquid, solid, and gaseous.)

16. A: "Buoyant" means able to float. The passage indicates this by indicating that the gases therefore, sank toward earth and suffocated people. Buoyant does not mean visible (B) or possible to see. Able to float/buoyant does not mean able to evaporate (C). Evaporation means turning to vapor,

which only liquids can do. Gases are already vapors. Buoyant does not mean invisible (D) or unseen. Able to float does not mean able to condense (E), i.e. turn from vapor to liquid.

17. B: "Dissect" means to cut apart for study. It does not mean to describe in detail (A), to photograph (C), or to chart (D) a specimen.

18. B: Meteorologists are scientists who study atmospheric conditions, particularly weather. Scientists who study oceans (A) are oceanographers, i.e. marine scientists. Scientists who study ash (C) do not exist as members of a separate discipline. Climate scientists and many others concerned with its effects study volcanic ash. Scientists who study animal behavior (D) are ethologists or animal behaviorists and do not study ash.

19. C: Distilled water is purified water. Distilled water is not equivalent to bottled (A), volcanic (B), sea (D), or fountain (E) water.

Reading for the Main Idea

1. D: The passage describes actions of various First Ladies as examples of their importance in American culture. That they are key supporters of the Presidents (E) is not the main idea because the first paragraph states some First Ladies are remembered for influencing their husbands, while others "...have made the history books on their own." Not all First Ladies are described here as doing humanitarian work (A). No one First Lady is singled out as most important [(B), (C)].

2: D: The main idea is the importance of potatoes in America. It never mentions Ireland or any Potato Revolution (A). (B) is both incorrect-the passage states 100 lbs., not 50-and regardless of accuracy, is a detail, not the main idea. Readers already know French fries are made from potatoes (C), a detail the passage assumes. Several various terms for potatoes are mentioned in the second paragraph, but their history (E) is never discussed.

Advanced Reading Comprehension

1. C: The passage indicates that Muir liked to climb rocky cliffs as a child, and that when he was 11 years old, his family moved to the United States (A). Muir Woods was established (B) in 1908; Muir, born in 1838, was 11 years old in 1849, and was a rock-climbing child earlier. Muir walked to the Gulf of Mexico (D) in 1867-1868. The passage never suggests that Muir visited along the east coast (E) at all.

2. D: Muir invented his unique alarm clock in his youth, between 1849 and 1867, while he lived with his family in Wisconsin; not while they still lived in Scotland (A) until he was 11 years old; not after he sailed to San Francisco (B) in 1868, at the age of 30 years; not after he traveled in Yosemite (C), also in 1868; and not after he took the long walk in 1867-1868.

3. C: Soon after arriving in San Francisco, Muir headed inland for the Sierra Nevadas. The passage never reads that he ran outside during an earthquake (A). He proposed his theory about Yosemite's formation (B) during the late 1860s, after exploring Yosemite. After proposing his theory, Muir began writing articles, not about the Sierra Nevadas (D) overall, but specifically about the Yosemite Valley. The passage never indicates that he wrote short stories for the local newspaper (E).

4. A: The passage indicates that TR became President in 1901; after Muir took him through Yosemite, Roosevelt established Yosemite National Park in 1906. Therefore, they met between these years. 1838-1868 (B) is the first 30 years of Muir's life, from birth to going to San Francisco. 1906-1914 (C) would be after TR established Yosemite National Park through Muir's influence. 1868-1901 (D) is the period from Muir's arrival in San Francisco until Roosevelt's election. 1906-1907 (E) is also too late.

5. B: John Muir Trail was dedicated in 1938 (first paragraph, last two sentences). John Muir died (A) in 1914 (last paragraph). Muir's glacial theory was proven (C) in 1930 (fifth paragraph). The Sierra Club was formed (D) in 1892 (first sentence).

6. B: This passage gives how-to directions for using a metal file. It does not tell how to use a hammer (A), how to polish a file (C), how to oil a vise (D)-the directions include using a vise to hold the work while using the file, but not how to oil the vise-or how to repair shop tools (E).

7. D: The passage instructs the reader always to bear/press down on the forward stroke of the file only, and to lift the file rather than bearing down on the return stroke (A). (Even with very soft metals, it instructs to drag slightly, not press down, on the return stroke.) Moving it in a circle (B) and removing the handle (C) are never mentioned. (Buying and installing a handle are advised.) Wearing protective gloves (E) is never mentioned.

8. B: The instructions do include how to clear the teeth of pieces of very soft metals. They do not direct readers to remove the handle (A); to bear down very hard on the return stroke (C), which they advise to avoid as it will dull the teeth, advising slight dragging instead; to file in circles (D), or to add wood for strength (E).

9. D: The instructions advise users to install a handle to protect their hands rather than dulling the teeth (A), against which they advise; dragging the teeth on the return stroke (B), which is recommended NOT for protecting hands but for clearing the file's teeth of pieces from very soft metals; using a vise (C), which is recommended to free the hands, not protect them; or wearing safety gloves (E), which is never mentioned.

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