

1. According to the U.S. Census, the population of the United States was approximately 280,000,000. How can this number be represented in scientific notation?
 - A. $.28 \times 10^9$
 - B. 2.8×10^8
 - C. 28×10^7
 - D. $280 \times 1,000,000$

2. When graphed on a number line, which of the following numbers would be farthest away from zero?
 - A. -4
 - B. 0.5
 - C. $1\frac{5}{8}$
 - D. $\sqrt{9}$

3. Simplify: $6(8^2 \div 4 + 4)$
 - A. 48
 - B. 100
 - C. 104
 - D. 120

4. If a car can travel 84 miles on three gallons of gas, how many miles can this same car travel on 10 gallons?
 - A. 252 miles
 - B. 280 miles
 - C. 840 miles
 - D. 2520 miles

5. A factory produced 42,150 parts last month. When they were tested, 2% were found to be defective. How many parts were good?
 - A. 843
 - B. 8430
 - C. 33720
 - D. 41307

6. A used car was priced at \$8,000. The salesperson then offered a discount of \$400. This discount represents what percent of the original price?

A. 0.5%
B. 5%
C. 20%
D. 32%

7. Simplify: $5\frac{3}{8} + 1\frac{2}{3}$

A. $6\frac{1}{4}$
B. $6\frac{5}{11}$
C. $7\frac{1}{24}$
D. $9\frac{1}{8}$

8. The temperature outside is 50° F. What is the temperature in Celsius?

A. 0° C
B. 10° C
C. 24° C
D. 122° C

9. What is the volume of a rectangular prism with a length of 8 inches, width of 7 inches, and height of 3 inches?

A. 18 in.³
B. 36 in.³
C. 168 in.³
D. 336 in.³

10. 1 mile = 5,280 feet

How many feet are in 12 miles?

A) 6,336 B) 63,360 C) 440 D) 5,292

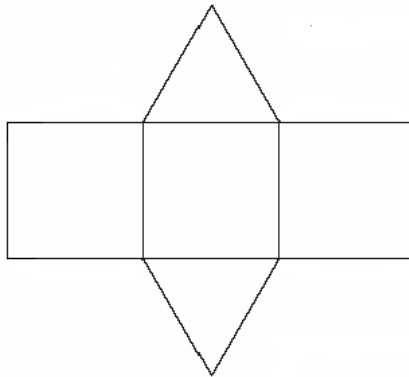
11. Greg is 130 centimeters tall. How many meters is that?

- A) 1.3 m B) 13 m C) .13 m D) 13,000 m

12. The sides of a given cube each measure 8 inches. Find the surface area of the cube.

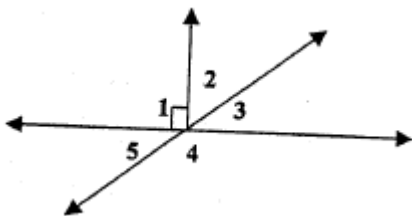
- A. 64 in^2
B. 128 in^2
C. 384 in^2
D. 512 in^2

13. What 3 dimensional shape can be formed from the net below?



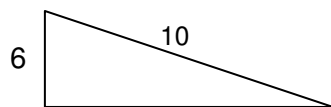
- A. Cube
B. Cone
C. Rectangular Prism
D. Triangular Prism

14. Which angles are supplementary?



- A. $\angle 2$ and $\angle 3$
B. $\angle 3$ and $\angle 4$
C. $\angle 3$ and $\angle 5$
D. $\angle 1$ and $\angle 2$

15. In the triangle below, the length of two sides is given. What is the length of the third side?



- A. 7
B. 8
C. 9
D. 60
16. When the sum of the measures of two angles is 90° , the angles can be classified using which of the following terms?
- A. Complementary
B. Supplementary
C. Vertical
D. Congruent
17. Mr. Kyle drives six miles south and then eight miles east. What was the diagonal distance from his starting point?
- A. 2 miles B. 10 miles C. 14 miles D. 48 miles
18. Three of the vertices of a rectangle are listed below.

$(7, 1)$, $(7, -6)$, $(-2, -6)$

What are the coordinates of the fourth vertex?

- A. $(-2, -7)$
B. $(7, -2)$
C. $(-2, 1)$
D. $(-6, -7)$
19. What is the next number in the pattern?

2, 5, 10, 17, _____

- A. 24
B. 25
C. 26
D. 27

20. Which equation describes the relationship shown in this table?

| | | | | | | | |
|---|---|---|---|----|----|----|----|
| a | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b | 2 | 5 | 8 | 11 | 14 | 17 | 20 |

- A. $b = 4 - a$
- B. $b = a + 2$
- C. $b = 2a + 1$
- D. $b = 3a - 1$

21. Solve: $2x - 9 = 11$

- A. $x = 1$
- B. $x = 4$
- C. $x = 10$
- D. $x = 20$

22. For which equation is $(-1, 5)$ a solution?

- A. $x = -2y + 9$
- B. $x = -y + 7$
- C. $x = 2y + 9$
- D. $x = y + 3$

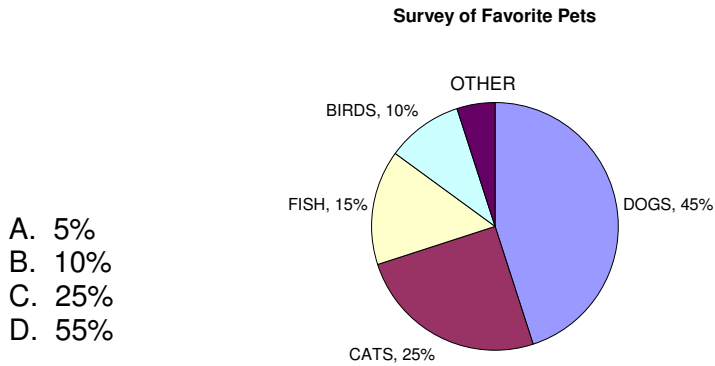
23. A phone company calculates its customers monthly bill by charging a flat fee of \$14 plus \$.32 per minute for each minute spent talking on the phone. If T represents the Total Bill (in dollars) and m represents the minutes spent talking on the phone, which equation below represents the equation used by the phone company?

- A. $.32T = 14m$
- B. $14T = .32m$
- C. $T = 14 + .32m$
- D. $T = 14m + .32$

24. Andrea spent \$7.50 for 2 burgers and 1 order of fries. If a burger costs twice as much as an order of fries, what is the price of the fries??

- A. \$0.75
- B. \$1.50
- C. \$1.75
- D. \$3.00

25. According to the graph, what percent of the students chose pets other than those listed?



26. The stem and leaf plot below shows the test scores for a group of students.

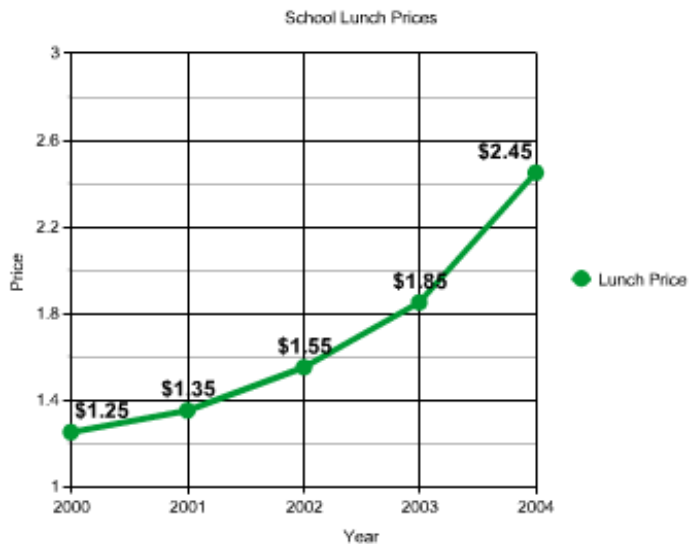
Test Scores

| | |
|---|------------------|
| 9 | 1, 2, 2, 5, 6, 7 |
| 8 | 3, 4, 4, 6 |
| 7 | 2, 5, 6, 9, 9 |
| 6 | 4, 7, 9, 9 |

How many students scored greater than 78?

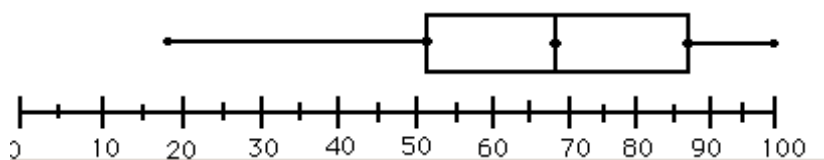
- A. 2 B. 10 C. 12 D. 19

27. According to the graph below, what was the average price increase from 2000 to 2003?



- A. \$0.10
B. \$0.20
C. \$0.60
D. \$1.85

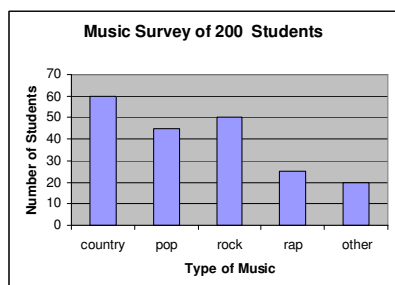
28. A box-and-whisker plot has been used to represent at set of data.



Based on the box-and-whisker plot, what is the lower quartile of the data?

- A. Approximately 17
- B. Approximately 52
- C. Approximately 68
- D. Approximately 86

29. The school population is 1,800 students. Two hundred students were surveyed to determine their favorite type of music. Approximately how many of the total school population do you expect to like rap music?



- A. 25
- B. 225
- C. 72
- D. 450

30. There are 18 boys and 20 girls on the school's student council. If a student council member is selected at random to speak at the next assembly, what is the probability that a girl will not be selected?

- A. $\frac{18}{20}$
- B. $\frac{18}{38}$
- C. $\frac{20}{38}$
- D. $\frac{20}{58}$

31. A local college is having parking passes printed for students to place on their cars. A sample pass is shown below. Each pass will have a different code. Each pass will start and end with a letter of the alphabet with 3 digits in the middle.

Sample:



How many different parking passes can be printed?

- A. 100,000
- B. 492,804
- C. 676,000
- D. 11,881,376

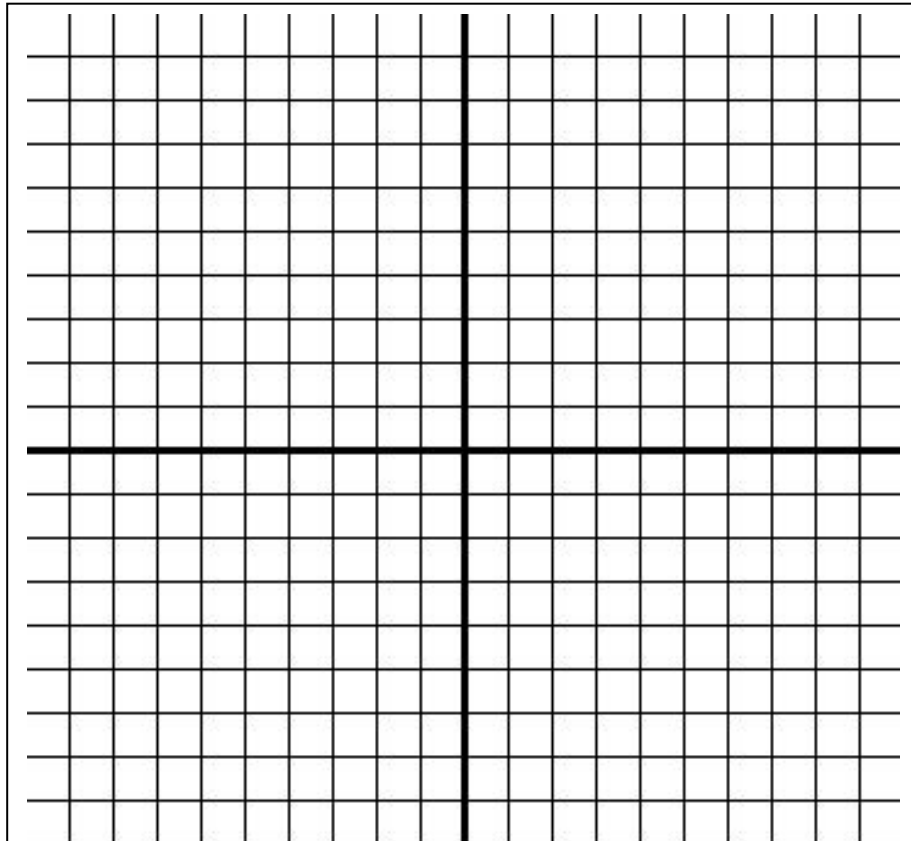
32. Use the following equation to answer each part of question 32.

$$y = 3x + 4$$

A. One point that lies on the line is shown in the table below. Find 2 more points that are on the line and list them in the table.

| x | y |
|----|----|
| -2 | -2 |

B. On the grid below, label the x- and y- axis.



C. Graph the line $y = 3x + 4$ on the coordinate plane above.

1. Contained within a tube taken as a sample from a riverbed are 480,000,000 grains of sand. How can this number be represented in scientific notation?
 - A. 48×10^7
 - B. 4.8×10^9
 - C. 4.8×10^8
 - D. $.48 \times 10^8$

2. If these numbers were graphed on a number line, which of the following would be closest to zero?
 - A. $\frac{2}{9}$
 - B. .20
 - C. $\frac{3}{2}$
 - D. $\sqrt{4}$

3. $4^2 (6 + 3) \div 12 + 4(3^2 + 2)$
 - A. 24
 - B. 112
 - C. 56
 - D. 52

4. If a car can travel 56 miles on 2 gallons of gas, how many miles can the same car travel on 18 gallons of gas?
 - A. 252 miles
 - B. 504 miles
 - C. 525 miles
 - D. 1008 miles

5. Apple sold 950,536 *Ipods* last year. 2 % of those *Ipods* were found defective by the customer and had to be replaced under the warranty. Approximately how many *Ipods* did Apple have to replace last year?
 - A. 190
 - B. 1901
 - C. 1910

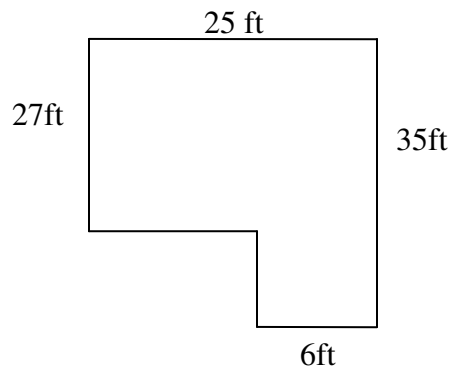
- D. 19,010
6. A pair of sneakers was priced at \$145. Jeff has a coupon for 15% off any pair of shoes. If Jeff were to buy this pair of sneakers, how much would he save?
- A. \$ 21.75
B. \$ 22.00
C. \$122.50
D. \$123.00
7. Chef Franz made a sub for the big game last weekend measuring $36\frac{1}{3}$ inches. If he ate $5\frac{1}{2}$ inches, how much of the sub remained?
- A. $30\frac{1}{3}$ inches
B. $30\frac{5}{6}$ inches
C. $31\frac{1}{6}$ inches
D. $31\frac{1}{2}$ inches
8. The high temperature yesterday was 15°C . How many degrees Fahrenheit was this?
- A. 52°F
B. 56°F
C. 59°F
D. 62°F
9. What is the volume of a rectangular prism with a length of 13 inches, width of 10 inches, and height of 6 inches?
- A. 29 in.^3
B. 78 in.^3
C. 130 in.^3
D. 780 in.^3

10. 1 lb = 16 oz

How many ounces are in 8 pounds?

- A) 2 B) 128 C) 8 D) 124

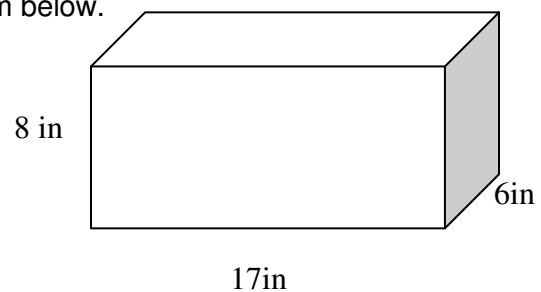
11. Use the floor plan pictured below to find the minimum number of square feet of carpeting needed to carpet the entire floor from wall to wall.



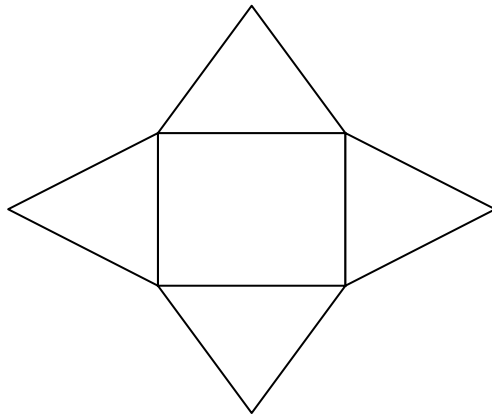
- A. 675 ft^2
B. 717 ft^2
C. 723 ft^2
D. 875 ft^2

12. Find the surface area of the rectangular prism below.

- A. 286 in^2
B. 572 in^2
C. 806 in^2
D. 816 in^2

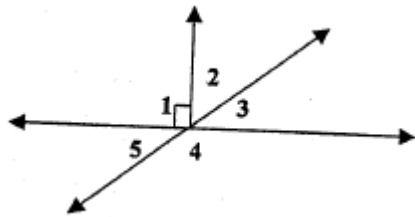


13. What 3 dimensional shape can be formed from the net below?



- A. Cone
- B. Pyramid
- C. Triangular Prism
- D. Rectangular Prism

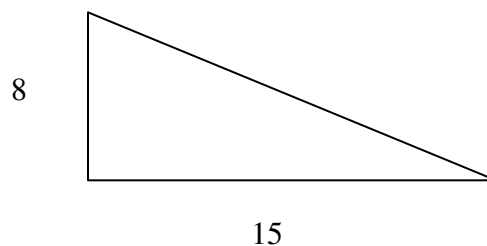
14. Which angles are supplementary?



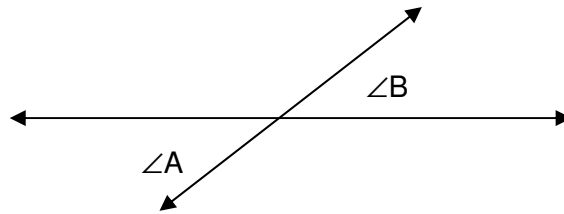
- A. $\angle 2$ and $\angle 3$
- B. $\angle 3$ and $\angle 5$
- C. $\angle 1$ and $\angle 5$
- D. $\angle 4$ and $\angle 5$

15. In the triangle below, the lengths of two sides are given. What is the length of the third side?

- A. 20
- B. 17
- C. 19
- D. 23



16. In the diagram below, angles A and B are:



- A. Complementary
- B. Supplementary
- C. Vertical
- D. Congruent

17. Mr. Kyle drives nine miles south and then twelve miles east. What was the diagonal distance from his starting point?

- A. 3 miles
- B. 525 miles
- C. 21 miles
- D. 15 miles

18. Three of the vertices of a rectangle are listed below.

$(3,4)$, $(-5,4)$, $(-5,-2)$

What are the coordinates of the fourth vertex?

- A. $(-5,2)$
- B. $(3,-2)$
- C. $(-4,5)$
- D. $(3,-5)$

19. What is the next number in the pattern?

1, 2, 4, 8, ____

- A. 10
- B. 12
- C. 16
- D. 20

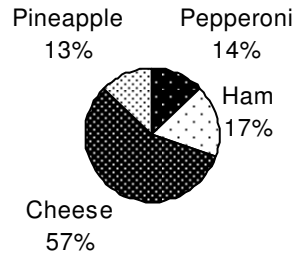
20. Which equation describes the relationship shown in this table?

| | | | | | | | |
|---|---|---|---|---|---|----|----|
| a | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b | 0 | 2 | 4 | 6 | 8 | 10 | 12 |

- A. $b = a + 2$
B. $b = 2a - 2$
C. $b = 2a + 1$
D. $b = 2a - 1$
21. If $2x + 6 = 28$, what is the value of x ?
- A. 7
B. 8
C. 10
D. 11
22. For which equation is $(-3, 8)$ a solution?
- A. $x = y - 5$
B. $x = y + 5$
C. $x = -y + 5$
D. $x = -y - 5$
23. A car rental service charges a flat \$150 fee to rent a car and an additional \$.35 per mile driven. If T represents the Total Bill (in dollars) and m represents the miles driven, which equation below represents the equation used by the rental company to calculate a bill?
- A. $.35T = 150m$
B. $.35m = 150T$
C. $T = .35 + 150m$
D. $T = .35m + 150$
24. Samantha spent \$7.00 for 2 orders of fries and a order of chicken nuggets. If the chicken nuggets cost twice as much as an order of fries, what is the price of the chicken nuggets?
- A. \$1.50
B. \$1.75
C. \$3.00
D. \$3.50

25. 500 students were surveyed regarding their favorite pizza topping. The results of the survey are shown in the circle graph. Based on the graph, how many students indicated that Pineapple is their favorite topping?

- A. 13
- B. 57
- C. 65
- D. 500



26. The stem and leaf plot below shows the test scores for a group of students.

| Test Scores | |
|-------------|------------------|
| 9 | 1, 2, 2, 5, 6, 7 |
| 8 | 3, 4, 4, 6 |
| 7 | 2, 5, 6, 9, 9 |
| 6 | 4, 7, 9, 9 |

How many students scored greater than 75?

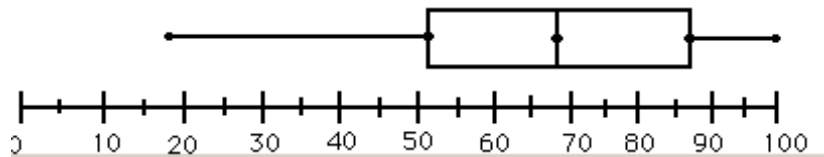
- A. 6
- B. 10
- C. 13
- D. 18

27. According to the graph below, what was the increase in price from 2001 to 2004?

- A. \$0.50
- B. \$0.75
- C. \$1.00
- D. \$1.10



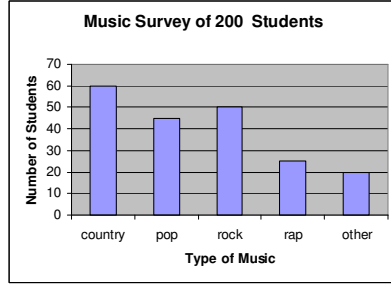
28. A box-and-whisker plot has been used to represent a set of data.



Based on the box-and-whisker plot, what is the median of the set of data?

- A. Approximately 18
- B. Approximately 52
- C. Approximately 68
- D. Approximately 86

29. The school population is 2,400 students. Three hundred students were surveyed to determine their favorite type of music. Approximately how many of the total school population do you expect to like rap music?



- A. 25
- B. 200
- C. 600
- D. 96

30. There are 22 dogs and 16 cats at the local animal shelter. If a pet is selected at random to help publicize the animal shelter, what is the probability that a dog will be selected?

- A. $\frac{22}{16}$
- B. $\frac{16}{22}$
- C. $\frac{16}{38}$
- D. $\frac{22}{38}$

31. A local college is having parking passes printed for students to place on their cars. A sample pass is shown below. Each pass will have a different code. Each pass will start and end with a letter of the alphabet and have 2 numbers in the middle.

Sample:

M 53 K

- A. 16,760
- B. 67,600
- C. 6,760
- D. 676,000

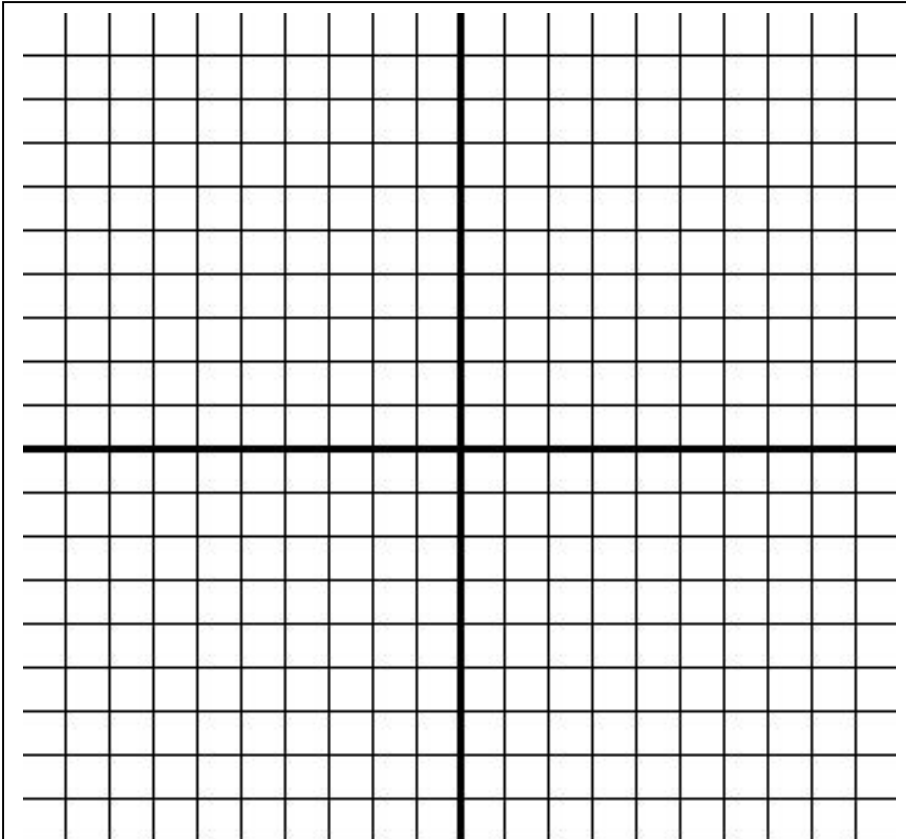
32. Use the following equation to answer each part of question 32.

$$Y = 4x - 6$$

- A. One point that lies on the line is shown in the table below. Find 2 more points that are on the line and list them in the table.

| X | Y |
|---|----|
| 1 | -2 |
| | |
| | |

- B. On the grid below, label the x- and y- axis.



- C. Graph the line $y = 4x - 6$ on the coordinate plane above.

1. The 8th grade science class has been doing an experiment to see how many cheerios boxes they can collect. The class collects 10 boxes, for a total of 5,300,000 individual cheerios. What is this number written in scientific notation?
- A. 5.3×10^7
B. 53×10^7
C. 5.30×10^6
D. 5.3×10^6
2. When graphed on a number line, which number would be closest to zero?
- A. -2
B. $\frac{9}{6}$
C. $\frac{4}{8}$
D. 2
3. Evaluate: $(3 + 6)^2 \div 3 - 2(1 + 6)$
- A. 150
B. 13
C. 15
D. 27
4. If a car can travel 84 miles on three gallons of gas, how many miles can the same car travel on 16 gallons?
- A. 448 miles
B. 420 miles
C. 672 miles
D. 1344 miles
5. Jack's baseball card is worth \$450. In two years, the value of the card will have gone up by 15%. How much will Jack's card be worth in 2 years?
- A. \$500.50
B. \$467.50
C. \$517.50
D. \$525.50

6. A used car was priced at \$7500. The salesperson then offered a discount of \$600. This discount represents what percent of the original price?

A. 10%
B. 8%
C. 9%
D. 5%

7. Simplify: $6\frac{4}{5} + 8\frac{2}{3}$

A. $15\frac{2}{3}$
B. $15\frac{7}{15}$
C. $14\frac{7}{15}$
D. $14\frac{2}{3}$

8. The high temperature last week was 82° F. What is the temperature in Celsius?

A. 30° C
B. 24° C
C. 26° C
D. 28° C

9. What is the volume of a rectangular prism with a length of 14 inches, width of 8 inches and a height of 5 inches?

A. 56 in.³
B. 27 in.³
C. 560 in.³
D. 270 in.³

10. 1 lb. = 16 oz.

How many ounces are in 12 pounds?

A. 1.4 oz. B. 28 oz. C. 192 oz. D. 208 oz.

11. Emily is 1.4 meters tall. How many centimeters is that?

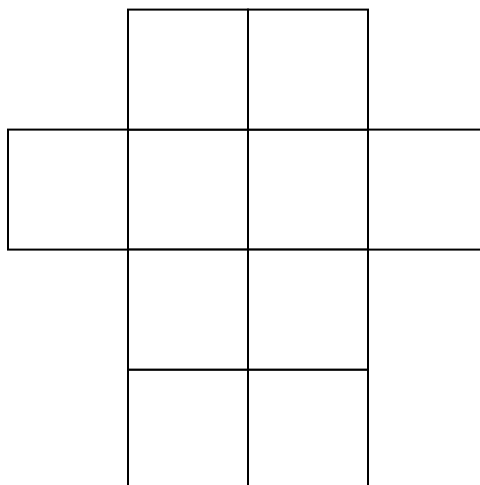
- A. 0.14 m B. 14 cm C. 140 cm D. 1,400 cm

12. The sides of a given cube each measure 12 inches. Find the surface area of the cube.

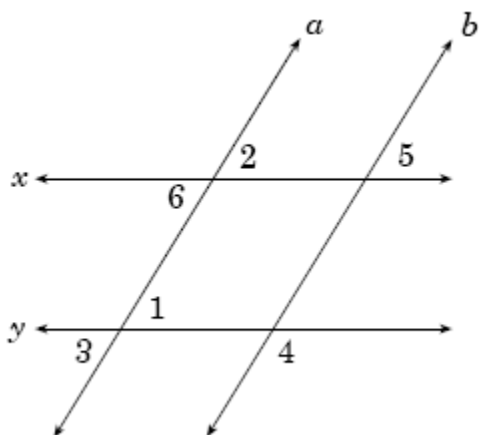
- A. 720 in^2
B. 1728 in^2
C. 576 in^2
D. 864 in^2

13. Which 3-dimensional shape can be formed from the net below?

- A. Cube
B. Triangular Prism
C. Rectangular Prism
D. Pyramid



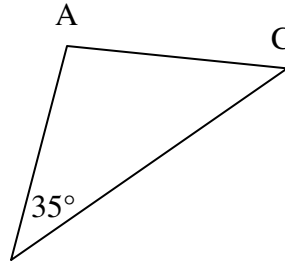
14. If $x \parallel y$ and $a \parallel b$, then which pair of numbered angles must be supplementary?



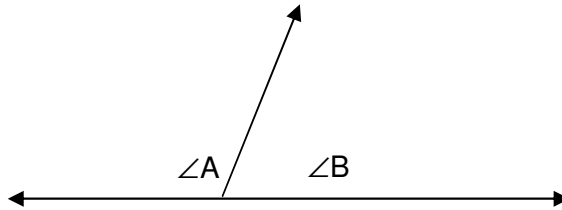
- A) $\angle 1$ and $\angle 2$
B) $\angle 2$ and $\angle 4$
C) $\angle 3$ and $\angle 5$
D) $\angle 3$ and $\angle 6$

15. In the triangle below, Angle B is classified as...

- A. Right
- B. Acute
- C. Obtuse
- D. Straight



16. In the diagram below, if $m\angle B = 75^\circ$, then what is $m\angle A$



- A. 15° B. 105° C. 115° D. 285°

17. Mr. Griffith drives sixteen miles south and then twelve miles east. What was the diagonal distance from his starting point?

- A. 4 miles B. 18 miles C. 20 miles D. 28 miles

18. Three of the vertices of a rectangle are listed below.

$(-5,2)$, $(3,-2)$, $(3,2)$

What are the coordinates of the fourth vertex?

- A. (-3,-2)
- B. (-2,-5)
- C. (-5,-2)
- D. (5,2)

19. What is the next number in the pattern?

2, 4, 16, _____

- A. 25 B. 256 C. 36 D. 32

20. Which equation describes the relationship shown in this table?

| | | | | | | | |
|---|---|----|----|----|----|----|----|
| a | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b | 9 | 13 | 17 | 21 | 25 | 29 | 33 |

- A. $b = 4a - 5$
- B. $b = 2a + 10$
- C. $b = 4a + 5$
- D. $b = 2a + 5$

21. Solve: $3x + 9 = 48$

- A. $x = 3$
- B. $x = 9$
- C. $x = 11$
- D. $x = 13$

22. For which equation is (-3, 5) a solution?

- A. $x = 3y - 4$
- B. $x = -2y + 7$
- C. $x = 2y - 6$
- D. $x = y + 16$

23. ABC Garage charges \$42 for brakes and \$22 per hour of service. If T is the total cost of the brake replacement and x is the number of hours of service, which equation below represents the money spent in repairing the car?

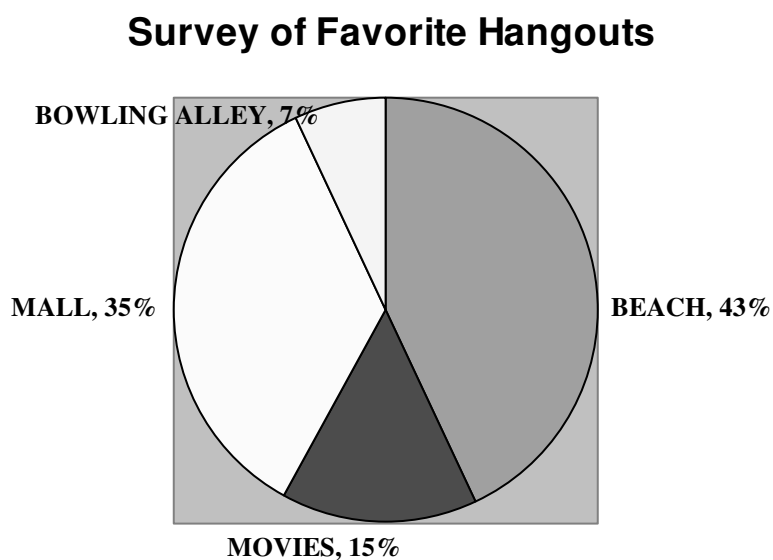
- A. $64x = T$
- B. $42x + 22 = T$
- C. $22x + 42 = T$

D. $22x = T$

24. Alex spent \$6.25 on 2 slices of pizza and a soda. If a slice of pizza costs twice as much as a soda, what is the price of the soda?

- A. \$2.25
- B. \$1.25
- C. \$2.50
- D. \$1.50

25. According to the graph what percent of students chose the beach?



- A. 7%
- B. 35%
- C. 15%
- D. 43%

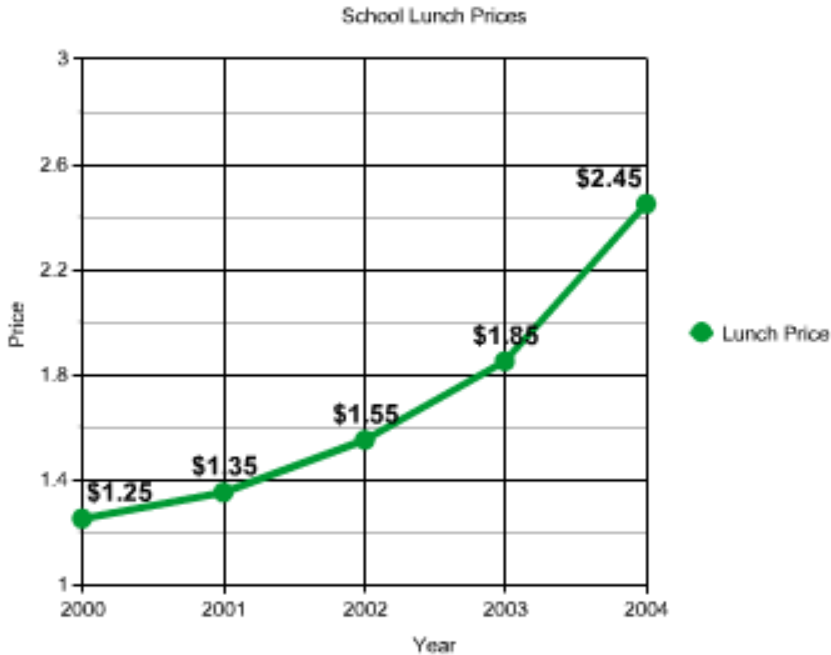
26. The stem and leaf plot below shows the test scores for a group of students.

TEST SCORES

| 9 | 1, 4, 6 |
|---|---------------|
| 8 | 2, 3, 5, 5 |
| 7 | 3, 5, 7, 7, 9 |
| 6 | 6, 8, 8, 9 |

If each student needs at least an 81 to pass, how many students did not pass?

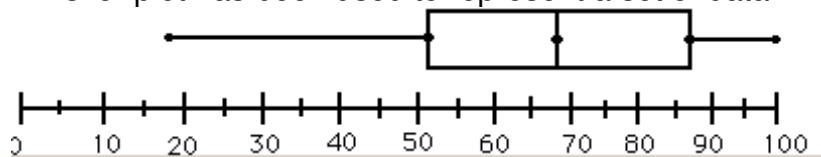
- A. 7 students
- B. 9 students
- C. 13 students
- D. 4 students



27. According to the graph above, how many times did the price increase by more than \$0.25?

- A. Once
- B. Twice
- C. Three Times
- D. Never

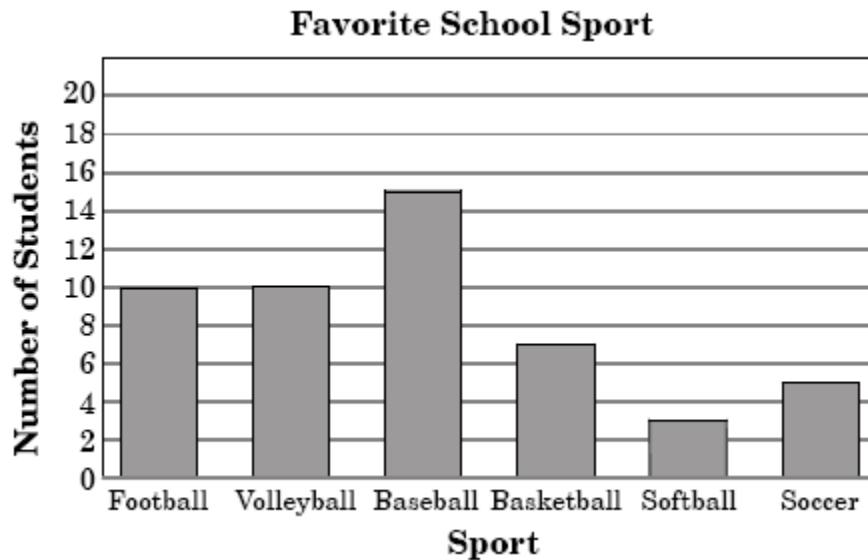
28. A box-and-whisker plot has been used to represent a set of data.



Based on the box-and-whisker plot, what is the upper quartile of the data?

- A. Approximately 52
- B. Approximately 100
- C. Approximately 17
- D. Approximately 86

29. The population of a school is 800 students. The results from a random sampling of 50 students in the school are shown below. About how many students in the entire school would you expect like basketball?



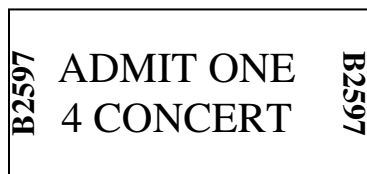
- A. 16 students
- B. 112 students
- C. 160 students
- D. 240 students

30. There are 16 hens and 12 roosters in the hen house. If a farmer was to feed the first bird to walk out of the hen house, what is the probability that a hen would not be selected?

- A. $\frac{12}{16}$
- B. $\frac{16}{12}$
- C. $\frac{12}{28}$
- D. $\frac{16}{38}$

31. A local college is having tickets printed for an upcoming concert. Each ticket begins with a letter and is followed by 4 digits. How many different tickets can be printed?

Sample:



- A. 26,000
- B. 2,600
- C. 260,000
- D. 20,600

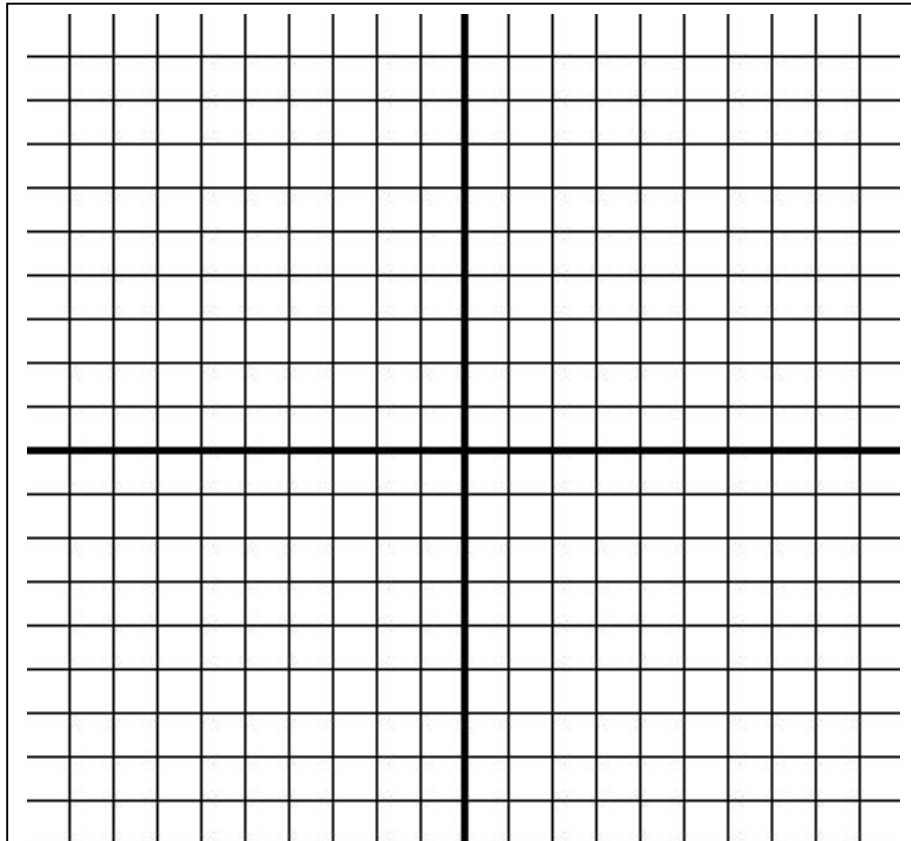
32. Use the following equation to answer each part of question 32.

$$y = 4x - 6$$

A. One point that lies on the line is shown in the table below. Find 2 more points that are on the line and list them in the table.

| x | y |
|---|---|
| 2 | 2 |
| | |
| | |

C. On the grid below, label the x- and y- axis.



C. Graph the line $y = -2x + 3$ on the coordinate plane above.