

Name \_\_\_\_\_

Summer Math – 7<sup>th</sup> going to 8th

**\*SHOW ALL WORK, BOX ANSWERS, and KEEP SCRATCH PAPER**

**\*WORK SHOULD BE SHOWN FOR EACH PROBLEM IN THE FORM OF CALCULATIONS, PICTURES, OR WORDS**

**\*DUE FIRST DAY OF CLASS FOR A GRADE**

**Evaluate each expression when  $x=12$ .**

1.  $2x =$  \_\_\_\_\_

2.  $x + 8.3 =$  \_\_\_\_\_

3.  $\frac{x}{24} =$  \_\_\_\_\_

**Solve each equation.**

1.  $x - 4 = -17$

2.  $2r = 48$

3.  $\frac{n}{15} = -2$

4.  $\frac{2}{5} b = 20$

5.  $2x + 6 = 12$

6.  $\frac{2}{3} b - 4 = 12$

**Complete the chart. Fractions must be in lowest terms**

Fraction	Decimal	Percent
$\frac{3}{5}$		
	0.08	
		30%

Fractions: Add, subtract, multiply, or divide. Final answer is to be in simplest form

1)  $4 - 2\frac{5}{6} =$  \_\_\_\_\_

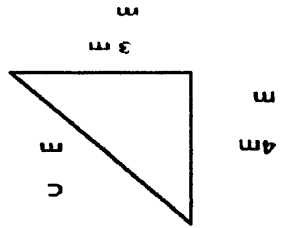
3)  $\frac{7}{3} + \frac{1}{2} =$  \_\_\_\_\_

5)  $\frac{3}{2} \div \frac{1}{6} =$  \_\_\_\_\_

6)  $\frac{8}{5} \div 10 =$  \_\_\_\_\_

4)  $1\frac{1}{3} \times \frac{1}{2} =$  \_\_\_\_\_

2)  $5\frac{4}{9} - 3\frac{1}{3} =$  \_\_\_\_\_



Solve using the Pythagorean Theorem  $a^2 + b^2 = c^2$

Integers: Add, subtract, multiply, or divide.

1.  $5 + -3 =$  \_\_\_\_\_

2.  $6 - (-13) =$  \_\_\_\_\_

3.  $-8 + -3 =$  \_\_\_\_\_

4.  $25 - 32 =$  \_\_\_\_\_

5.  $-5 \times -6 =$  \_\_\_\_\_

6.  $(-6) \times (-8) =$  \_\_\_\_\_

7.  $-(-\frac{12}{4}) =$  \_\_\_\_\_

8.  $-\frac{12}{3} =$  \_\_\_\_\_

Write in scientific notation

1.  $5,354,000,000 =$  \_\_\_\_\_

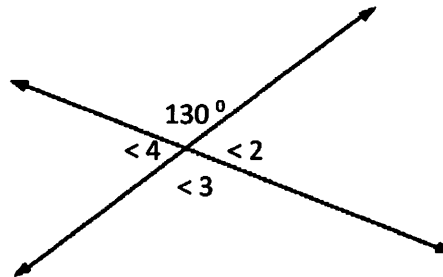
2.  $.000065 =$  \_\_\_\_\_

Find each angle measure

$m\angle 2 =$  \_\_\_\_\_

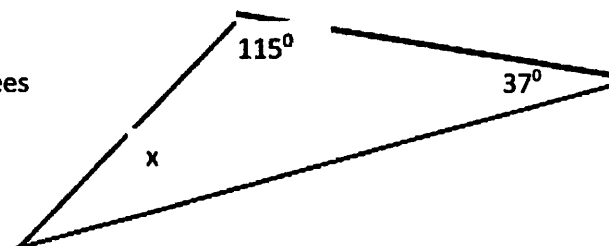
$m\angle 3 =$  \_\_\_\_\_

$m\angle 4 =$  \_\_\_\_\_

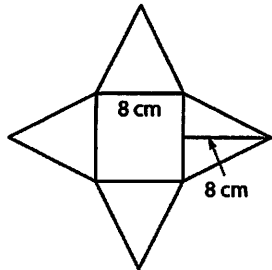


Find the missing angle in the triangle.

Missing angle " $x$ " = \_\_\_\_\_ degrees

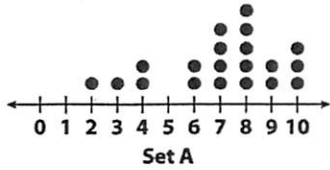
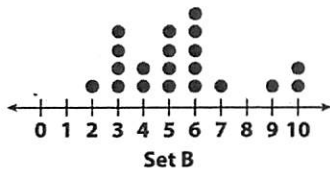


1. What is the mean for the set of data shown below?  
27, 32, 14, 19, 24, 26, 22, 32, 29
- A 18                      C 26  
B 25                      D 32
2. Max drove 460 miles in 8 hours at a constant speed. How long would it take him to drive 661.25 miles at that speed?
- A 10.5                    C 11.5  
B 11                        D 12
3. A mural inspired by a photograph measures 108 inches by 180 inches. The scale factor is 12. What are the dimensions of the photograph?
- A 8 in.  $\times$  14 in.  
B 7.5 in.  $\times$  10.5 in.  
C 9 in.  $\times$  10.5 in.  
D 9 in.  $\times$  15 in.
4. The net of a square pyramid is shown below. What is the surface area of the pyramid?



- A  $100 \text{ cm}^2$               C  $172 \text{ cm}^2$   
B  $136 \text{ cm}^2$               D  $192 \text{ cm}^2$
5. A gallon of paint covers 400 square feet. How many square feet will  $2\frac{3}{8}$  gallons of paint cover?
- A  $950 \text{ ft}^2$   
B  $986 \text{ ft}^2$   
C  $1,040 \text{ ft}^2$   
D  $1,068 \text{ ft}^2$

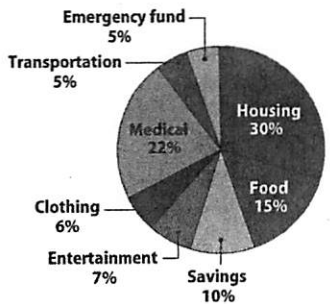
6. Based on the dot plots below, which of the following is a true statement?



- A Set B is less symmetrical than Set A.  
 B Set B has the lesser mean.  
 C Set A has the greater range.  
 D Set A has the lesser mode.
7. A deli makes sandwiches to order. A customer can choose ham, turkey, or roast beef, and have it served on white, wheat, or rye bread. They can also choose mustard, mayonnaise, ketchup, or hot sauce. How many different sandwiches of one meat, one bread, and one condiment can a customer order?

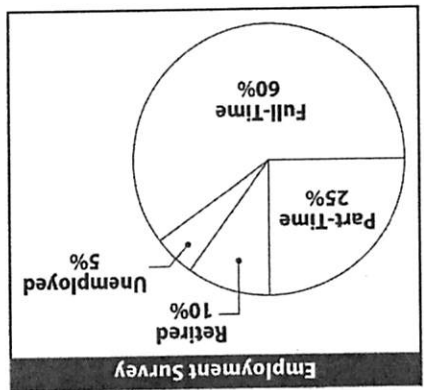
- A 28                      C 36  
 B 32                      D 45

8. The Jenkins family's monthly budget is shown in the circle graph. The family has a monthly income of \$4800. How much money do they spend on transportation each month?



- A \$200                      C \$240  
 B \$220                      D \$288

9. The circle graph shows the results of an employment survey of 900 people. How many of the people surveyed are employed part-time?



- A 225
- B 320
- C 450
- D 810

10. Which of the following is a random sample?

- A A survey company asks radio station listeners to call in and tell their favorite radio station.
- B 150 customers at an Italian restaurant are asked about their favorite food.
- C A professional polling company surveys voters about who they would like to be elected as senator.
- D Cameron emails students to find out how many have a computer at home.

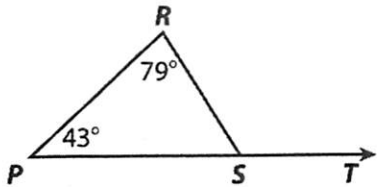
11. In a circle of any size, what ratio does  $\pi$  ( $\pi$ ) represent?

- A radius : diameter
- B circumference : area
- C circumference : radius
- D circumference : diameter

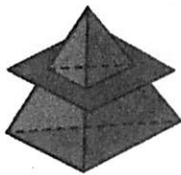
12. The probability of spinning an even number on a spinner is 0.4. What is the probability of **not** spinning an even number, expressed as a percent?

- A 90%
- B 60%
- C 40%
- D 6%

13. What is the measure of  $\angle RST$  in the diagram below?



- A  $58^\circ$                       C  $122^\circ$   
B  $101^\circ$                     D  $180^\circ$
14. A horizontal plane intersects a triangular pyramid as shown below. What is the shape of the cross-section?



- A triangle                      C pyramid  
B parallelogram                D rectangle
15. Juanita has a bag of marbles. Without looking, she removes one marble, notes the color, and replaces it. She repeats this process 70 times and records the results in the table below.

Color	Frequency
Red	14
Green	19
Blue	21
Yellow	16

What is the probability that she will pick a blue marble on her seventy-first try?

- A  $\frac{1}{5}$                               C  $\frac{19}{70}$   
B  $\frac{8}{35}$                             D  $\frac{3}{10}$
16. What is 64% of 40?
- A 104                              C 26  
B 28.3                            D 25.6

17. Simplify  $\frac{1}{3}(9a + b) - \frac{1}{2}(4a + 2b)$ .

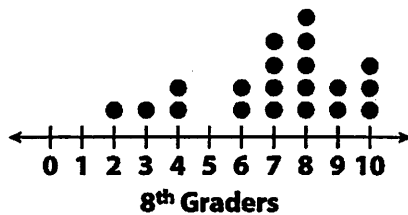
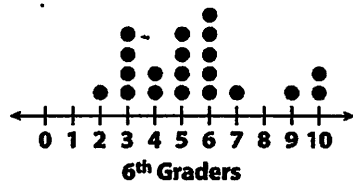
A  $a - \frac{2}{3}b$                       C  $2a + \frac{1}{2}b$

B  $a + \frac{1}{3}b$                       D  $2a - b$

18. The volume of a rectangular prism is 240 cubic centimeters. A rectangular pyramid has the same length, width, and height as the prism. What is the volume of the pyramid?

A  $720 \text{ cm}^3$                       C  $80 \text{ cm}^3$   
 B  $360 \text{ cm}^3$                       D  $40 \text{ cm}^3$

19. Tim took a random survey of 20 sixth graders and 20 eighth graders. He asked how many hours a week each played sports. His data is shown in the two dot plots below.



What is the difference between the median number of hours that 6<sup>th</sup> graders play sports and the median number of hours that 8<sup>th</sup> graders play sports?

A 4 h                                  C 2 h  
 B 2.5 h                              D 1.65 h

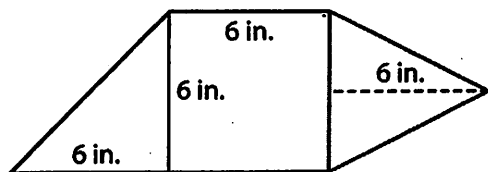
20. What is the value of the expression below?

$$(-64) \div (-16)$$

A 4                                      C -4  
 B -1                                    D -8



21. A quarterback completes 65% of his passes. Out of his next 40 passes, how many can you expect to be completed?
- A 22 passes            C 26 passes  
B 24 passes            D 28 passes
22. The Canadian \$1 coin has a diameter of 26.5 mm. What is the circumference of the coin? Use 3.14 for  $\pi$ .
- A 83.21 mm            C 158.64 mm  
B 108.64 mm          D 166.42 mm
23. Melissa bought a new dishwasher for \$1,200. The manufacturer is offering a 15% rebate. How much will the dishwasher cost after the rebate?
- A \$180                  C \$1,020  
B \$1,000                D \$1,380
24. What is the area of the figure below?



- A  $40 \text{ in}^2$               C  $64 \text{ in}^2$   
B  $54 \text{ in}^2$               D  $72 \text{ in}^2$
25. Evan wants to leave an 18% tip for the server at a restaurant. Which expression does **not** show how to calculate the tip if  $b$  is the total bill?
- A  $0.18b$                   C  $0.1b + 0.08b$   
B  $b + 0.18b$             D  $b - 0.82b$
26. What is the greatest integer that satisfies the inequality  $3x - 4 \leq 8$ ?
- A 4                          C 6  
B 5                          D 7

27. Harry rolls a number cube. What is the probability that he will roll an even number or a number greater than 4?

- A  $\frac{6}{1}$   
 B  $\frac{3}{1}$   
 C  $\frac{2}{1}$   
 D  $\frac{3}{2}$

28. Which of the following equations represents the same linear relationship shown in the table below?

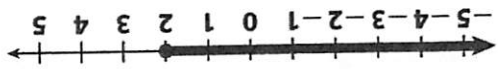
x	2	3	4	5
y	7	9	11	13

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

29. The base of a rectangular pyramid has sides 3 feet long and 7 feet long. The pyramid is 4 feet tall. A second, larger pyramid has dimensions that are 3 times the dimensions of the smaller pyramid. What is the difference between the volumes of the two pyramids?

- A  $28 \text{ ft}^3$   
 B  $56 \text{ ft}^3$   
 C  $728 \text{ ft}^3$   
 D  $756 \text{ ft}^3$

30. The solution to which inequality is shown in the number line below?

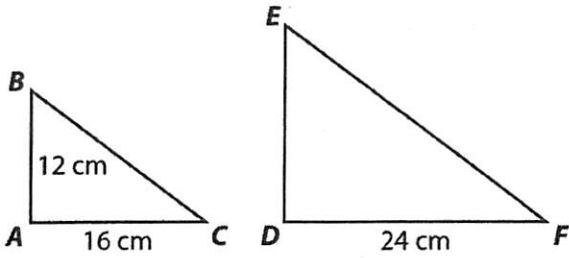


- A  $3x + 2 < 4$   
 B  $3x - 2 > 4$   
 C  $3x + 2 \geq 4$   
 D  $3x - 2 \leq 4$

31. Sal bought 3 CDs for \$15.98 each, a computer cable for \$39.95, and a case for his MP3 player for \$24.99. Sales tax is 7%. To the nearest cent, what is the total cost of his purchases?

- A \$120.78  
 B \$121.78  
 C \$121.79  
 D \$130.79

32. The triangles below are similar. What is the length of  $\overline{ED}$ ?



- A 17 cm                      C 19 cm  
 B 18 cm                      D 20 cm
33. Which equation represents the data shown in the table below?

Fence Length ( $y$ )	100	150	180	240
Number of Posts ( $x$ )	11	16	19	25

- A  $y = 10x - 1$   
 B  $y = 10(x - 1)$   
 C  $y = 10x + 1$   
 D  $y = 10(x + 1)$
34. Marissa hiked  $1\frac{3}{4}$  miles in  $\frac{3}{4}$  hours. At that rate, how far can she hike in one hour?
- A  $\frac{1}{2}$  mi                      C  $1\frac{5}{16}$  mi  
 B  $\frac{2}{3}$  mi                      D  $2\frac{1}{3}$  mi
35. Nick tosses a standard number cube and spins a spinner. The spinner is divided into four equal sections colored red, blue, green, and yellow. What is the probability that Nick rolls an odd number and spins green?
- A  $\frac{1}{8}$                               C  $\frac{1}{5}$   
 B  $\frac{1}{6}$                               D  $\frac{1}{4}$