

Name: _____ Date: _____ Period: _____

Algebra 1 Summer Homework

Date Due: First Day of School. This will count as 1 quiz grade. You must solve the problems on notebook (or graph) paper. All work must be clearly shown with answers boxed. You should be able to complete these problems without using a calculator. A test will be given over the Summer Review at the end of the first week of school. This test will be averaged into your First 6 Weeks HS Algebra grade. Please check the class syllabus for grade percentages.

Write and Solve an equation that fits the situation.

1. Container A and container B have leaks. Container A has 800 ml of water and is leaking 6 ml per minute. Container B has 1000 ml of water and is leaking 10 ml per minute. How many minutes, m , will it take for the two containers to have the same amount of water?

2. Lenny makes \$55,000 and is getting annual raises of \$2,500. Karl makes \$62,000 with annual raises of \$2,000. How many years, y , will it take for Lenny and Karl to make the same salary?

Write an equation of a linear line in slope intercept form.

3. A line that goes through (1, 2) (5, 10)

4. A line that passes through (4, 3) (8, 1)

Find the slope of two points from the two given points.

5. $(-4, 7)(-6, -4)$

6. $(3, -20), (5, 8)$

7. Find the mean absolute deviation of the set of integers $\{21, 17, 15, 25, 19\}$

Solve each equation. Check your solution.

8. $3(1 - 3x) = 2(-4x + 7)$

9. $-3(x - 1) + 8(x - 3) = 6x + 7 - 5x$

10. $-8x + 4(4x - 3) = 4(6x + 4) - 4$

Solve the following problem:

11. The measures of three angles of a triangle are given by $13x - 27$, $12x + 4$, and $4x$. What is the measure of the largest angle?

A bag of marbles has 8 white, 6 blue, 5 red, 3 green, and 2 yellow. Two marbles are drawn and not replaced. Find the following probabilities.

12. $P(2 \text{ yellows})$

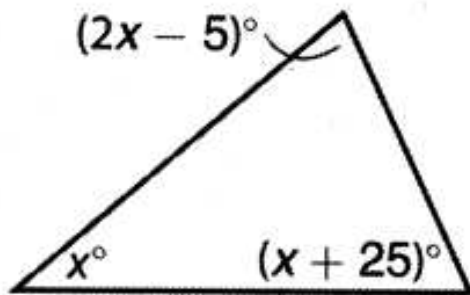
13. $P(\text{white, then red})$

Use the following information. A day in June is randomly selected and a number cube is rolled. Find the probability.

14. $P(\text{June 5 or before and even number})$

Find the measure of the three angles.

15.



Simplify the expression

16. $12m + 9 - 4m - 14$

Food

17. The minimum cost of a pizza is \$12.00. Write an inequality for this sentence.

Short Answer18. Solve and graph the solution to : $-2x + 5 < 6x + 15$ 19. Find the product of: $\frac{1}{5}$, $\frac{5}{6}$, and $\frac{4}{9}$.**Multiply or divide. Write in simplest form.**

20. $5\frac{2}{3} \div \left(-2\frac{4}{15}\right)$

Add or subtract. Write in simplest form.

21. $-4\frac{1}{3} - \left(-2\frac{1}{2}\right)$

Solve the equation.

22. $\frac{3}{4}x = 2\frac{1}{2}$

Determine whether a triangle with sides of the given lengths is a right triangle.

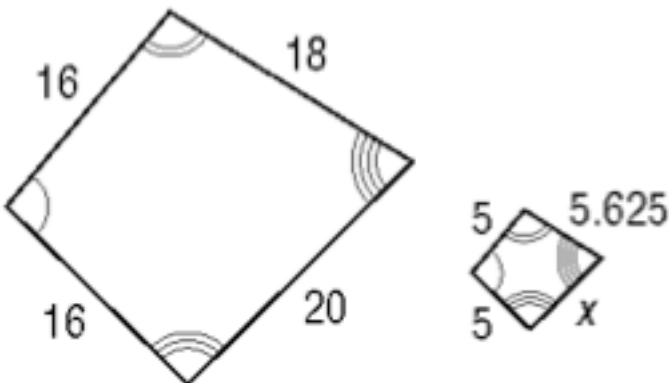
23. 24 meters, 45 meters, 51 meters

Solve the following problems.

24. Samuel has a garden that is shaped like a right triangle. One leg is 15 feet long, and the hypotenuse is 19 feet long. He has a limited number of tulip bulbs that he wants to plant. How many more feet will he have to cover if he plants them along the two legs rather than along the hypotenuse? Use a diagram and round to the nearest tenth.
25. Which is a better buy? 120 peak-time minutes for \$24.95 or 180 peak-time minutes for \$35.95? Explain your reasoning.

The polygons are similar. Write a proportion to find the missing measure. Then solve.

26.



Solve the following.

27. Polygon ABCD has vertices: $A'(-4, \frac{1}{3}), B'(-2\frac{1}{2}, 8), C'(2, 3\frac{1}{4}),$ and $D'(0, -1)$. Find the vertices for a dilation using a scale factor of 2.

28. Lexi earns \$7 for each pillow she sews. Which table represents this proportional relationship?

A

Pillows	3	6	9
Earnings (\$)	10	13	16

B

Pillows	4	6	8
Earnings (\$)	28	42	54

C

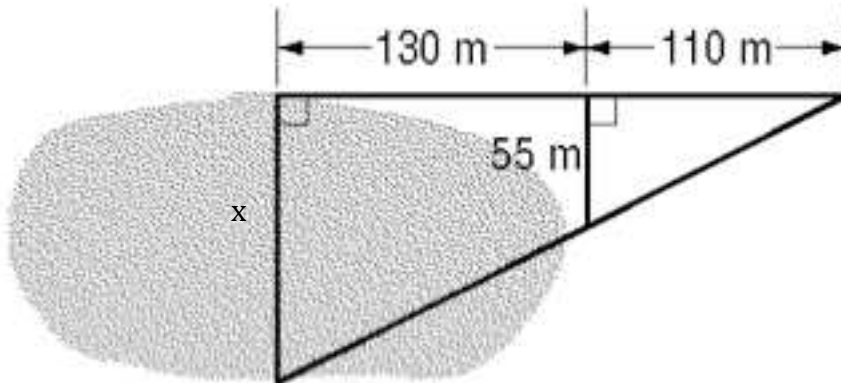
Pillows	5	7	9
Earnings (\$)	35	49	63

D

Pillows	6	8	10
Earnings (\$)	42	59	63

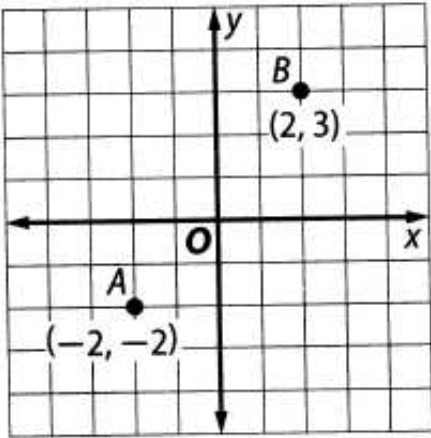
Find the missing distance.

29.



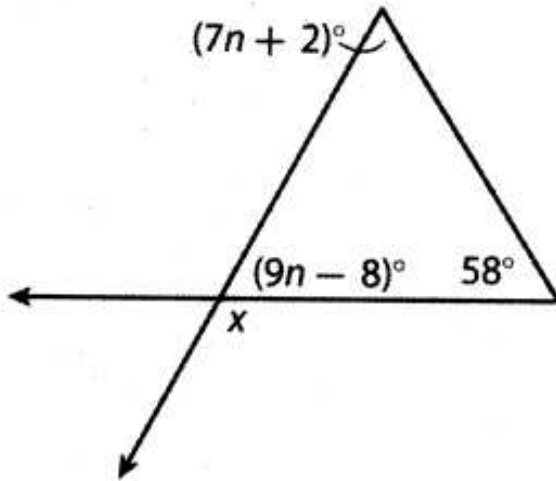
Find the distance between the two points. Round to the nearest tenth if necessary.

30.



Find the measure of x.

31.



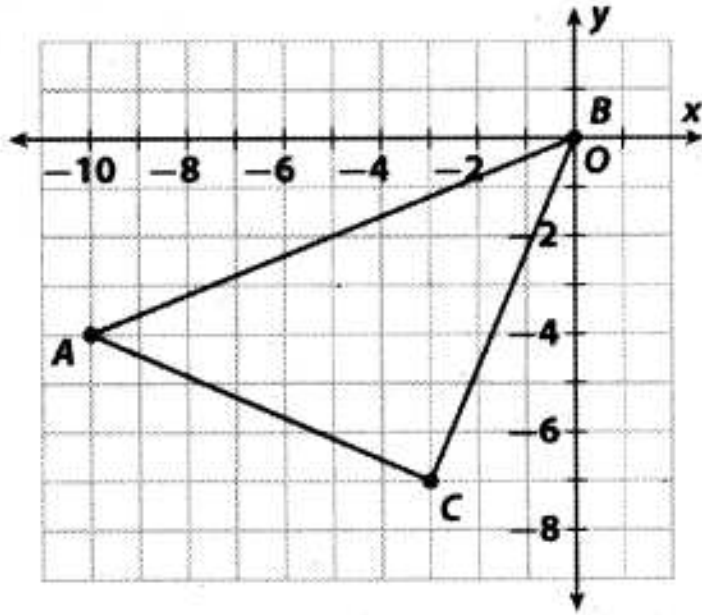
Solve

32. What percent of 51 is 17?

33. Of the city's 2,250 high school athletes, 28% went on to play sports in college. How many high school athletes went on to play sports in college?

34. Find the sales price for a video that regularly sells for \$18.95 and is marked 30% off. Round to the nearest cent.
35. Find the percent of discount when the regular price item is \$250 and the discount is \$75.
36. Find the total amount in an account to the nearest cent if \$5,000 was the initial amount, and it earned 7.5% simple interest for 42 months.
37. A test tube used in science class has a volume capacity of 9×10^{-3} liter. How many drops of a solution will it take to fill the test tube if each drop's volume is 3×10^{-5} liter?
38. Destiny is lifting weights each day. The first day, she lifts 20 pounds. The second day she lifts 24 pounds. The third day she lifts 28 pounds. If this pattern continues, how many pounds will she lift on the sixth day??

Use the graph of the triangle ABC below for 39-40.



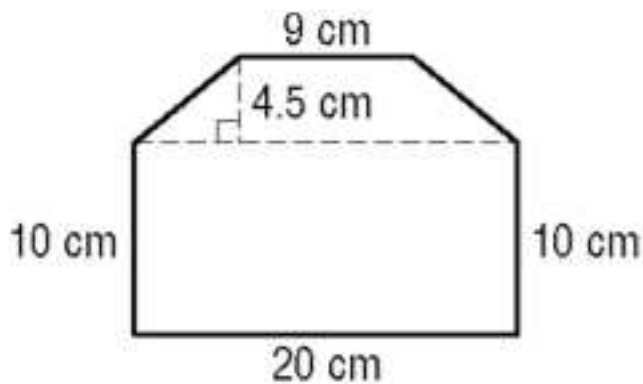
39. Triangle ABC is reflected across the y-axis. What are the new coordinates?

40. Which transformation takes A to (10, 4)?

- A $(x, y) \rightarrow (-x, y)$
- B $(x, y) \rightarrow (x, -y)$
- C $(x, y) \rightarrow (-x, -y)$
- D $(x, y) \rightarrow (-y, -x)$

Find the area of each figure. Round to the nearest tenth if necessary.

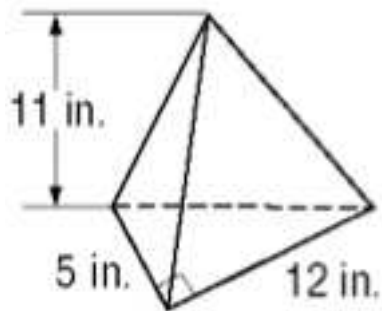
41.



42. Find the diameter of a circle if its area is 3.9 square miles. Round to the nearest tenth.

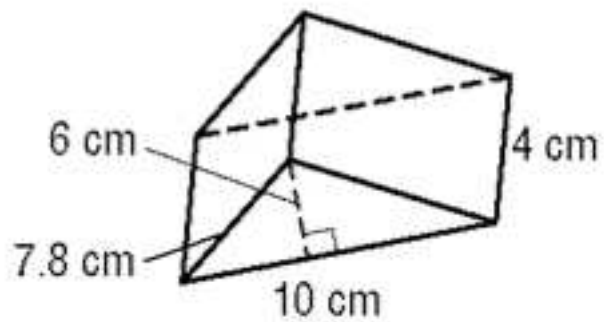
Find the volume of each solid. Round to the nearest tenth if necessary.

43.

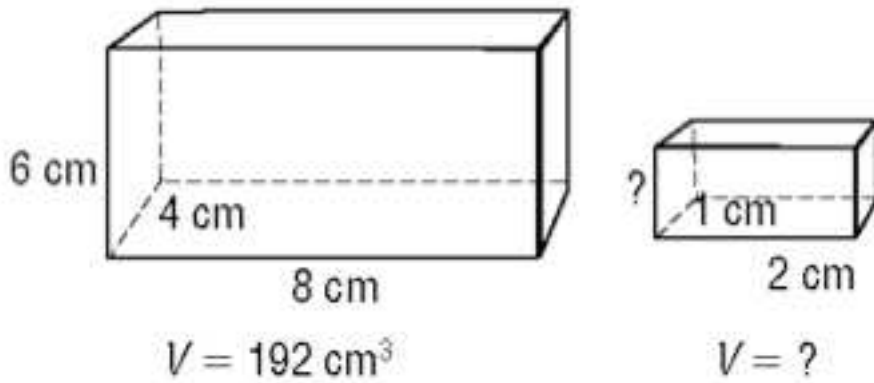


Find the surface area of each solid. Round to the nearest tenth if necessary.

44.



45. Two similar prisms are shown. Find the missing side length.



Solve the following.

46. Inez's patio is in the shape of a rectangle. Its dimensions are 45 feet by 25 feet. Find the length of the diagonal of the patio. Round your answer to the nearest tenth.

47. A diagonal of a cube goes from one of the cube's top corners to the opposite corner of the base of the cube. Find the length of a diagonal d in a cube that has an edge of length 10 meters.

48. Which number is between $\frac{3}{25}$ and $\sqrt{14}$?

A $\frac{1}{14}$

C $\sqrt{20}$

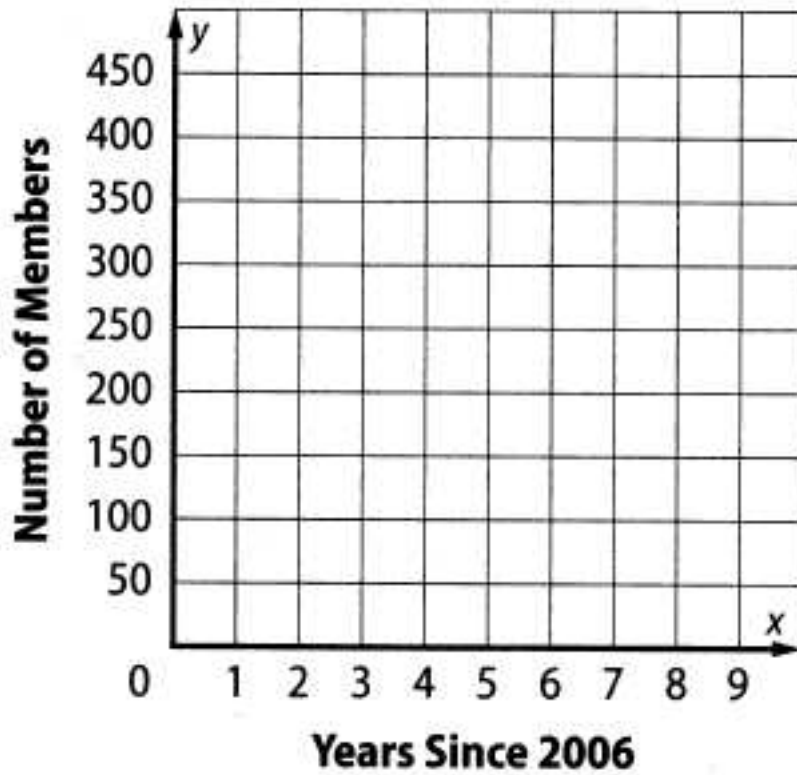
B $\frac{13}{4}$

D $2 + \pi$

CREATE THE SCATTERPLOT OF THE DATA.

49.

Years Since 2006	1	2	3	4	5	6	7	8
Number of Members	75	150	125	200	175	300	250	350



50. Use the scatterplot to predict how many members there will be in 2015.