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Extra Summer Review

Solve.

1. $x - 7 = -13$ **2.** $15 - 3c = 3$

3. One cell phone plan charges $20 per month plus $0.15 per minute used. A second cell phone plan charges $35 per month plus $0.10 per minute used. Write and solve an equation to find the number of minutes you must talk to have the same cost for both calling plans.

4. a. Write the formula for the area of a triangle.

   b. Solve the formula for h.

   c. The area of a triangle is 36 square inches. Use the new formula to find the height of the triangle in inches and in centimeters.

12 in.
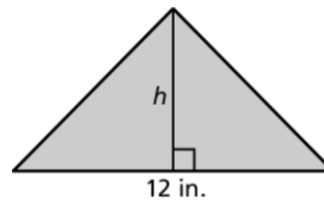
In Exercises 5 and 6, use the following information.

Parallelograms *ABCD* and *EFGH* are congruent.
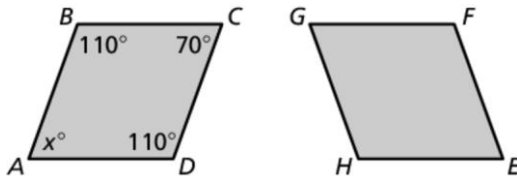
5. Which side of *EFGH* is congruent to side *AD*?

6. Find the measure of $\angle E$.

7. A triangle has vertices $A(-1, 3)$, $B(0, 2)$, and $C(-4, 0)$. Find the coordinates of the triangle after translating it up 2 units and reflecting it in the *x*-axis.

8. The two figures are similar. Find the values of x and y, and the ratios (larger to smaller) of the perimeters and areas.
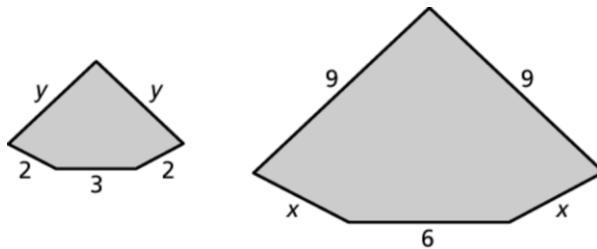
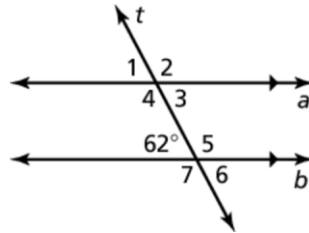**9.** An original piece of artwork is 3 feet by 2.5 feet. A reprint of the artwork is 6 inches by 5 inches. Are the pieces similar? If so, what is the ratio of their corresponding side lengths?

Answers

1. _____

2. _____

3. _____

   _____

4. a._____

   b._____

   c._____

   _____

5. _____

6. _____

7. _____

   _____

   _____

8. _____

   _____

   _____

9. _____

   _____

██████

10. Use the figure to find the measure of ∠1.

11. Find the measure of each angle of a
regular polygon with 8 sides.

12. You want to determine if two triangles are similar. What is the
minimum number of angles you need to measure to determine
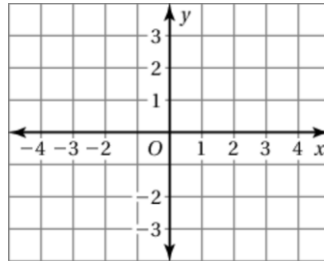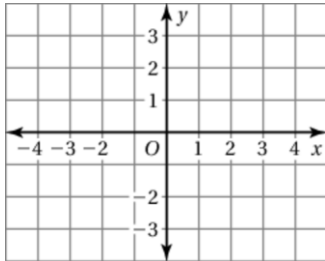if the triangles are similar? Explain.

**Find the slope and the *y*-intercept of the graph of the linear equation.
Then sketch its graph.**

13. $y = 3x - 2$

14. $2x + 4y = 6$

15. The equation $5x + 2y = 20$ represents the cost for a family to attend
a play where x is the number of adults and y is the number of
children. Find the intercepts and interpret the meaning of each one.

Write an equation of the line in slope-intercept form.

16. the line passing through $(0, 1)$ and $(-4, 5)$

17. the line with slope -2.5 and passing through $(2, 1.5)$

18. Recall that $0°C = 32°F$ and $100°C = 212°F$.

   a. Using x for degrees Celsius and y for degrees Fahrenheit, find
   an equation of the line passing through $(0, 32)$ and $(100, 212)$.

   b. What is the slope of the line? Explain what the slope means in
   terms of degrees Celsius and degrees Fahrenheit.

   c. What is the y-intercept of the line? Explain what the y-intercept
   means in terms of degrees Celsius and degrees Fahrenheit.

Answers

10. _____

11. _____

12. _____

_____

13. _____

_____

_____ See left.

14. _____

_____

_____ See left.

15. _____

_____

_____

_____

16. _____

17. _____

18. a. _____

b. _____

_____

_____

c. _____

_____

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Solve the system.

Answers

19. $y = 3x + 4$

$y - x = 2$

20. $y - 4x = 3$

$2y = 8x + 5$

21. $y = \dfrac{1}{2}x - 1$

$3x - y = -4$

19. _____

20. _____

21. _____

22. It costs $0.05 to send a text message and $0.10 to send a picture on your cell phone. You spend $4 and send five more text messages than pictures. How many text messages x and pictures y did you send?
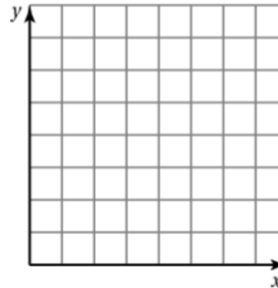
22. _____

_____

23. Draw a mapping diagram of the set of ordered pairs.

$(2, 3), (3, 5), (4, 1), (5, 2)$

23. __See left.__

24. a. __See left.__

b. _____

24. The table shows the cost y (in dollars) of x cold drinks.

Drinks, **x**	0	2	4	6
Cost, **y**	0	3	6	9

c. _____

25. _____

a. Graph the data.

b. Write a linear function that relates y to x.

c. How much does it cost to buy three drinks?

26. _____

27. _____

28. _____

29. _____

30. _____

Does the equation or table represent a *linear* or *nonlinear* function?

25. $2x - 4y = 6$

26.

x	3	7	11	15
y	2	4	8	16

Evaluate the expression.

27. $-\sqrt{121} + 15$

28. $6 - 5\sqrt[3]{\dfrac{1}{125}}$

29. A ladder is placed against the side of a house. The top of the ladder is 12 feet above the ground. The base of the ladder is 5 feet away from the house. Find the length of the ladder.

30. Between which two integers is $\sqrt{42}$? Explain.

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Find the volume of the solid. Round your answer to the nearest tenth.

31.

5 in.

8 in.

32.

5 mm

9 mm

33.

6 cm
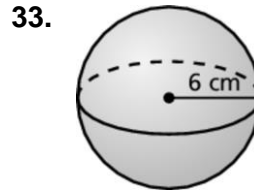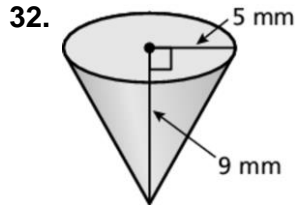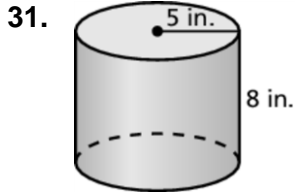
34. The table shows the number of years of college education and hourly earnings (in dollars) for several people.

Number of Years, x	0	1	3	5	6
Hourly Earnings, y	6	8	15	25	30

   a. Make a scatter plot of the data.

   b. Draw a line of fit.

   c. Write an equation for the line of fit.

   d. Predict the hourly earnings for a person with four years of college education.

Answers

31. _____

32. _____

33. _____
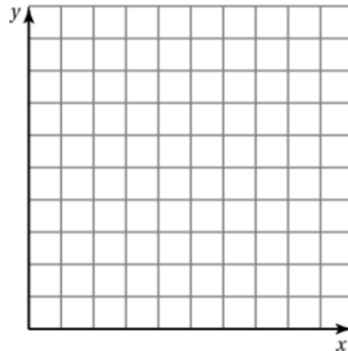
34. a. __See left.__

    b. __See left.__

    c. _____

    d. _____

35. __See left.__

36. __See left.__

37. _____

38. _____

39. _____

40. _____

41. _____

Evaluate.

37. $\left(3^2\right)^{-1}$

38. $12^3 \bullet 12^{-4}$

39. $\dfrac{(-7)^6}{(-7)^4}$

Multiply. Write your answer in scientific notation.

40. $\left(4.6 \times 10^{-2}\right) \times \left(1.0 \times 10^{-8}\right)$

41. $\left(2.5 \times 10^7\right) \times \left(1.4 \times 10^6\right)$