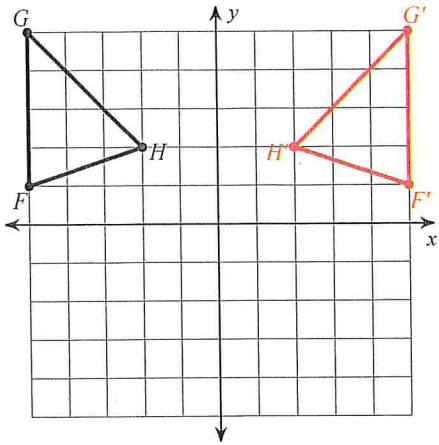


Practice Final

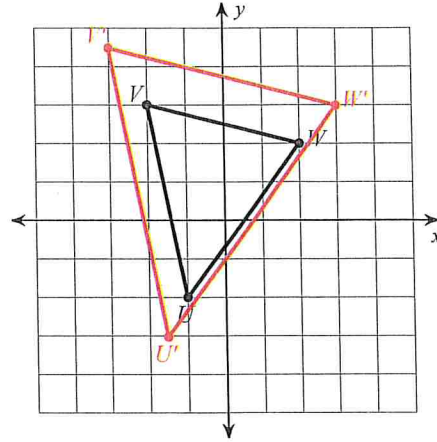
Answer Key

Graph the image of the figure using the transformation given.

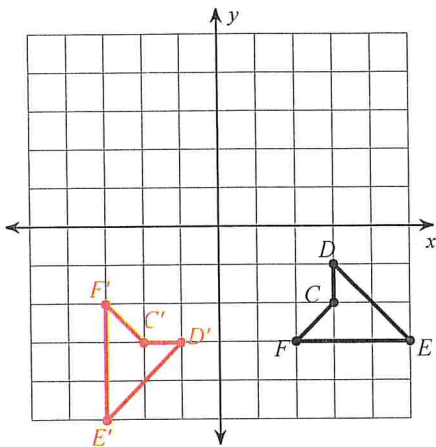
1) reflection across the y-axis



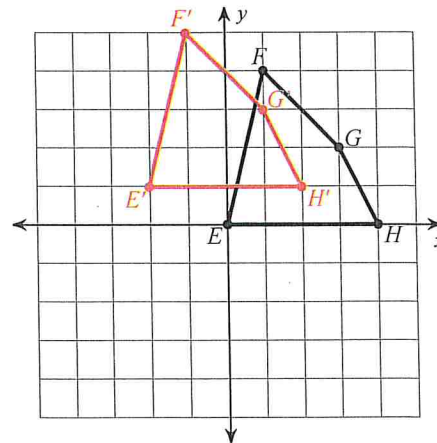
2) dilation of $\frac{3}{2}$ about the origin



3) rotation 90° clockwise about the origin

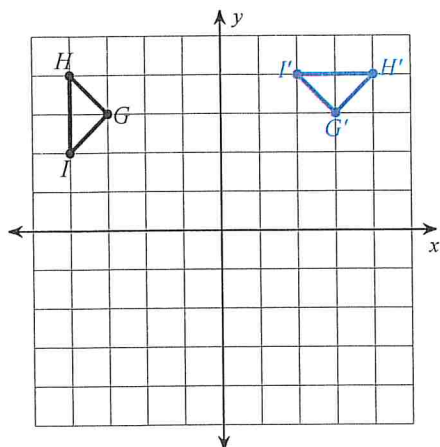


4) translation: 2 units left and 1 unit up



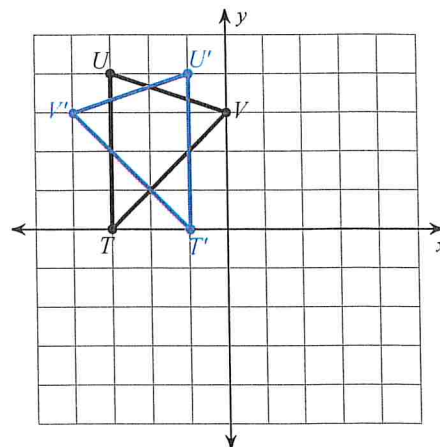
Write a rule to describe each transformation.

5)



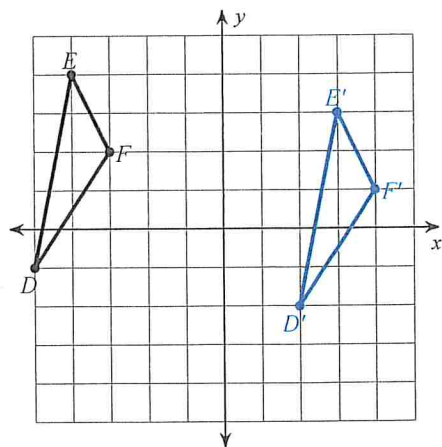
rotation 90° clockwise about the origin

6)



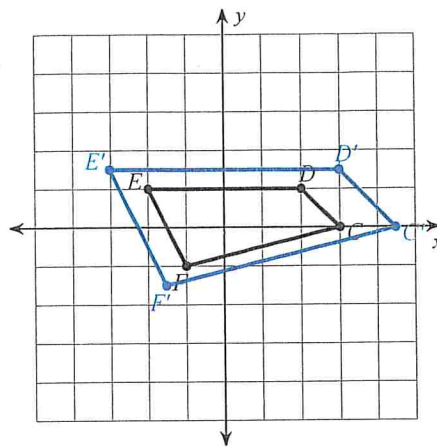
reflection across $x = -2$

7)



translation: 7 units right and 1 unit down

8)



Find the coordinates of the vertices of each figure after the given transformation.

9) rotation 180° about the origin

$V(2, 4), W(5, 5), X(5, 0)$

$V'(-2, -4), W'(-5, -5), X'(-5, 0)$

10) rotation 90° counterclockwise about the origin

$Y(1, 1), X(0, 2), W(4, 4), V(4, 0)$

$Y'(-1, 1), X'(-2, 0), W'(-4, 4), V'(0, 4)$

11) translation: 2 units right and 4 units up

$B(-3, -4), C(-4, 1), D(0, 0)$

$B'(-1, 0), C'(-2, 5), D'(2, 4)$

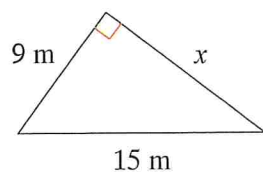
12) reflection across the y-axis

$T(-5, 4), U(-2, 5), V(-1, 2)$

$U'(2, 5), V'(1, 2), T'(5, 4)$

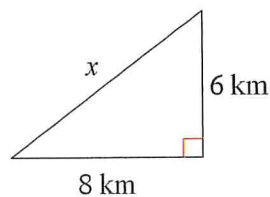
Find the missing side of each triangle. Round your answers to the nearest tenth if necessary.

13)



12 m

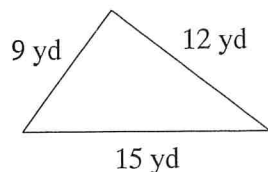
14)



10 km

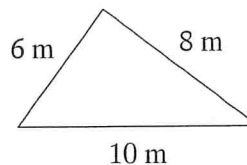
State if each triangle is a right triangle.

15)



Yes

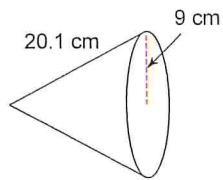
16)



Yes

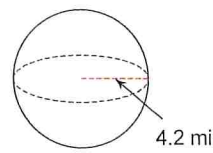
Find the surface area of each figure. Round your answers to the nearest hundredth, if necessary.

17)



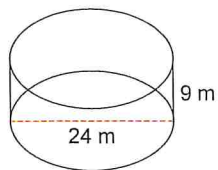
822.78 cm^2

18)



221.67 mi^2

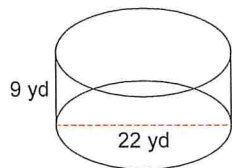
19)



1583.36 m^2

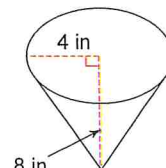
Find the volume of each figure. Round your answers to the nearest hundredth, if necessary.

20)



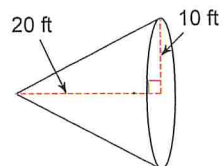
3421.19 yd^3

21)



134.04 in^3

22)



2094.4 ft^3

Simplify. Your answer should contain only positive exponents.

$$23) \frac{6x^{-2}}{3x^{-2}}$$

2

$$24) \frac{2n^3}{-6n^0}$$

$-\frac{n^3}{3}$

$$25) -6x^0 \cdot -6x^0$$

36

$$26) 2x^{-2} \cdot -3x^{-1} \cdot 6x^2$$

$-\frac{36}{x}$

$$27) (x^3)^{-1}$$

$\frac{1}{x^3}$

$$28) (-2x^3)^{-3}$$

$-\frac{1}{8x^9}$

Solve each equation.

$$29) 21 = 8 + 5x + 3$$

$\{2\}$

$$30) -9 - 3n + 8n = 5 - 2n - 7$$

$\{1\}$

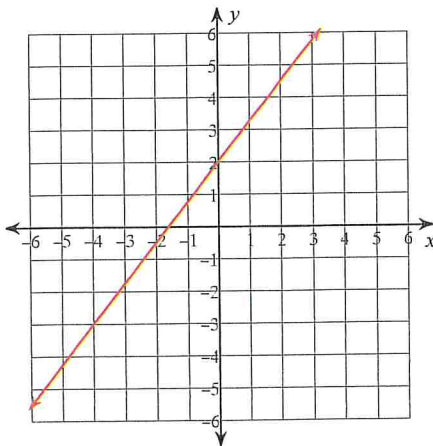
$$31) 5(8r + 5) = -23 - 8r$$

$\{-1\}$

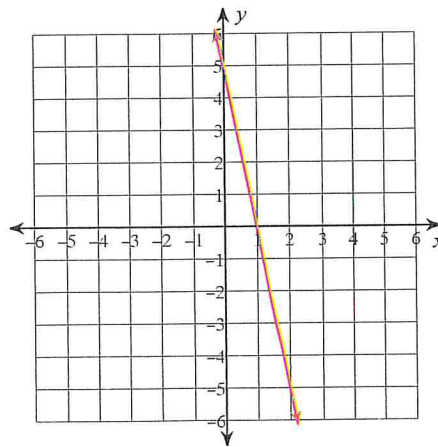
$$32) -2n - 1\frac{1}{4}n = -5\frac{1}{5} \left\{ \frac{8}{5} \right\}$$

Sketch the graph of each line.

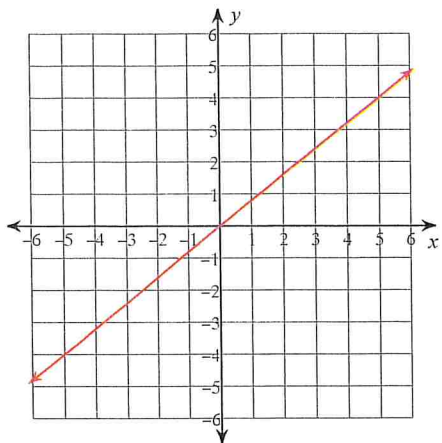
$$33) y = \frac{5}{4}x + 2$$



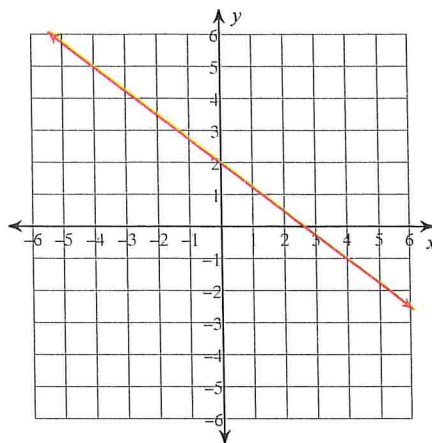
$$34) y = -5x + 5$$



35) $4x - 5y = 0$



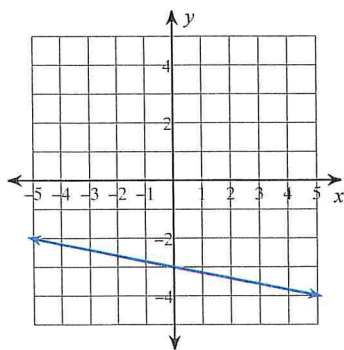
36) $3x + 4y = 8$



Write the slope-intercept form of the equation of each line.

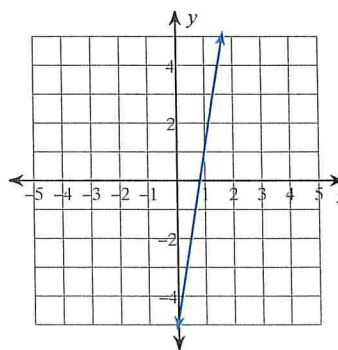
37)

$y = -\frac{1}{5}x - 3$



38)

$y = 6x - 5$



Write the slope-intercept form of the equation of each line given the slope and y-intercept.

39) Slope = $-\frac{1}{3}$, y-intercept = 4 $y = -\frac{1}{3}x + 4$

40) Slope = $-\frac{1}{2}$, y-intercept = -5

$y = -\frac{1}{2}x - 5$

Write the slope-intercept form of the equation of each line.

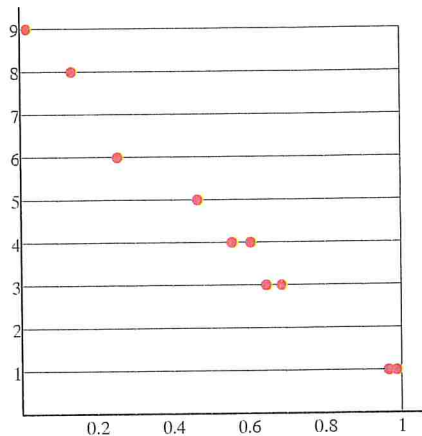
41) $2x - y = 1$ $y = 2x - 1$

42) $11x - 8y = -48$ $y = \frac{11}{8}x + 6$

Construct a scatter plot. State if there appears to be a positive correlation, negative correlation, or no correlation. When there is a correlation, identify the relationship as linear or nonlinear. If it is a linear relationship, find the slope-intercept form of the equation of the line that best fits the data.

43)

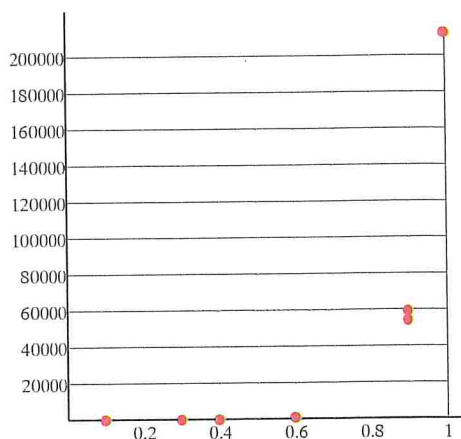
X	Y	X	Y	X	Y
0.65	3	0.61	4	0.97	1
0.02	9	0.26	6	0.56	4
0.69	3	0.99	1	0.47	5
0.14	8				



Negative correlation
Linear
 $y = -8.1991x + 8.7947$

44)

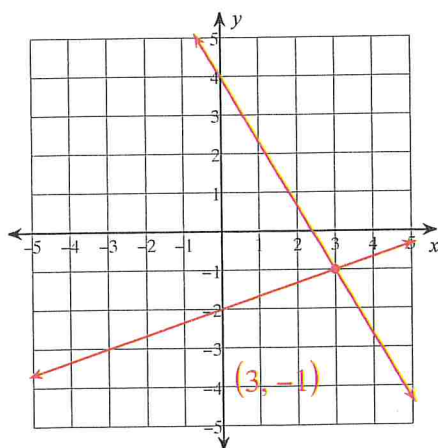
X	Y	X	Y
0.1	1	0.3	15
0.3	10	0.1	1
0.6	1,007	0.9	54,244
0.9	59,415	0.4	45
1	212,688	0.4	69



Positive correlation
Nonlinear
 $y = 151890x - 43196$

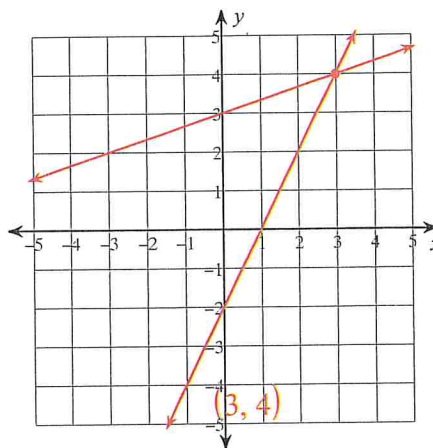
Solve each system by graphing.

45) $y = \frac{1}{3}x - 2$
 $y = -\frac{5}{3}x + 4$



$(3, -1)$

46) $y = 2x - 2$
 $y = \frac{1}{3}x + 3$



$(3, 4)$

Solve each system by substitution.

$$\begin{aligned} 47) \quad & y = -1 \\ & -7x - 6y = -22 \\ & (4, -1) \end{aligned}$$

$$\begin{aligned} 48) \quad & 6x - 4y = -4 \\ & y = -5 \\ & (-4, -5) \end{aligned}$$

49) Jimmy spent \$460 on books. Math books cost \$60 and science books cost \$80. If he bought a total of 7, then how many of each kind did he buy?

5 math books and 2 science books

50) Molly spent \$140 on shirts. Fancy shirts cost \$23 and plain shirts cost \$8. If she bought a total of 10, then how many of each kind did she buy?

4 fancy shirts and 6 plain shirts

