Quiz 2.2 SOLUTIONS

Solve

1.) $6z+1=13$

$6z+1-1=13-1$

$6z=12$

$\frac{6z}{6}=\frac{12}{6}$

$\boxed{z=2}$

2.) $\frac{6}{7}=\frac{1}{7}+\frac{5}{3}r$

$\frac{5}{7}=\frac{5}{3}r$

$\frac{5}{7}\cdot\frac{3}{5}=\frac{5}{3}\cdot\frac{3}{5}r$

$\boxed{\frac{3}{7}=r}$

3.) $11h-8-9h=-16$

$-8-2h=-16$

$-8-2h+8=-16+8$

$-2h=-8$

$\frac{-2h}{-2}=\frac{-8}{-2}$

$\boxed{h=4}$

4.) $-6x-7=-3-8x$

$-6x-7+8x=-3-8x+8x$

$-7+2x=-3$

$-7+2x+7=-3+7$

$2x=4$

$\frac{2x}{2}=\frac{4}{2}$

$\boxed{x=2}$

5.) $5-(6k+1)=2[(5k-3)-(k-2)]$

$5-6k-1=2[5k-3-k+2]$

$-6k+4=2[4k-1]$

$-6k+4=8k-2$

$-6k+4+6k=8k-2+6k$

$4=14k-2$

$4+2=14k-2+2$

$6=14k$

$\frac{6}{14}=\frac{14k}{14}$

$\boxed{3/7=k}$

6.) $1-6(2-h)=7$

$1-12+6h=7$

$-11+6h=7$

$-11+6h+11=7+11$

$6h=18$

$\frac{6h}{6}=\frac{18}{6}$

$\boxed{h=3}$

# SOLUTIONS

## Quiz 2.3

1.) $\frac{1}{2}x + 3 = 5$

$2\left(\frac{1}{2}x+3\right) = 2 \cdot 5$

$x + 6 = 10$

$\boxed{x = 4}$

$21 \times 6 = 126$

$2 \mid 84$, $2 \mid 42$, $3 \mid 21$, $7 \mid 7$

2.) $\frac{1}{4}(3m-4) - \frac{1}{5} = \frac{1}{4}m + \frac{3}{10}$

$\frac{3}{4}m - 1 - \frac{1}{5} = \frac{1}{4}m + \frac{3}{10}$

$\frac{3}{4}m - \frac{6}{5} = \frac{1}{4}m + \frac{3}{10}$

$20\left(\frac{3}{4}m - \frac{6}{5}\right) = 20\left(\frac{1}{4}m + \frac{3}{10}\right)$

$15m - 24 = 5m + 6$

$10m = 30$

$\boxed{m = 3}$

3.) $\frac{3}{7}x - 5 = \frac{24}{7}x + 7$

$7\left(\frac{3}{7}x - 5\right) = 7\left(\frac{24}{7}x + 7\right)$

$3x - 35 = 24x + 49$

$-84 = 21x$

$\boxed{-4 = x}$

$35 + 49 = 84$

$21 \times 4 = 84$

4.) $9.2y - 4.3 = 50.9$

$\frac{92}{10}y - \frac{43}{10} = \frac{509}{10}$

$10\left(\frac{92}{10}y - \frac{43}{10}\right) = 10\left(\frac{509}{10}\right)$

$92y - 43 = 509$

$92y = 552$

$\boxed{y = 552/92 = 6}$

$509 + 43 = 552$

5.) $0.125x = 0.025(5x+1)$

$\frac{125}{1000}x = \frac{25}{1000}(5x+1)$

$1000\left(\frac{125}{1000}x\right) = 1000\left(\frac{25}{1000}(5x+1)\right)$

$125x = 25(5x+1)$

$125x = 125x + 25$

$0 = 25$

Contradiction

$75 \times 2 = 150$

6.) $0.75(x-2) + 0.25(x+4) = 0.5$

$\frac{75}{100}(x-2) + \frac{25}{100}(x+4) = \frac{5}{10}$

$100\left(\frac{75}{100}(x-2) + \frac{25}{100}(x+4)\right) = 100\left(\frac{5}{10}\right)$

$75(x-2) + 25(x+4) = 50$

$(75x - 150) + (25x + 100) = 50$

$100x - 50 = 50$

$100x = 100$

$\boxed{x = 1}$

# Quiz 2.6 Solutions

Untitled

Solve for the indicated variable:

1.) Solve P=a+b+c for a

2.) Solve A=bh for b

3.) Solve Q = x/2 + y/2 for y

4.) Solve 4x- 3y = 12 for x

5.) The perimeter of a rectangular garden is 24 ft. The length is 2 ft more than the width. Find the length and width of the garden.

6.) The largest angle in a triangle is three times the smallest angle. The middle angle is two times the smallest angle. Given that the sum of angles in a triangle is 180 degrees, find the measure of each.

(1.) $a = P - b - c$

(2.) $b = \frac{A}{h}$

(3.) $Q - \frac{x}{2} = \frac{y}{2}$

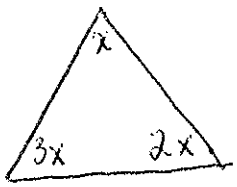
$2Q - x = y$

(4.) $4x = 12 + 3y$

$x = \frac{12+3y}{4}$

$= 3 + \frac{3}{4}y$

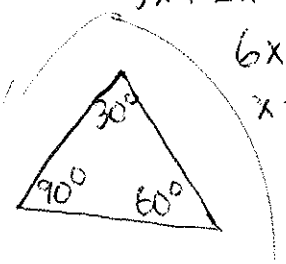
(6) Let x be the smallest angle.




$3x + 2x + x = 180$

$6x = 180$

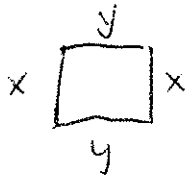
$x = 180/6 = 30°$; the smallest angle.




(5.) $P = 24$ ft

Let x represent length.

Let y represent width.




So

$\boxed{24 = 2x + 2y}$ Equation 1

length is 2 ft more than width

$x$ = 2 ft more than $y$

$\boxed{x = y + 2}$ Equation 2

Plug equation 2 into equation 1 to get

$24 = 2(y+2) + 2y$, and solve it.

$24 = 2y + 4 + 2y$

$24 = 4y + 4$

$20 = 4y$

$\boxed{5 = y}$, the width.

Plug this width into equation 2... you get

$\boxed{x = 5 + 2 = 7}$, the length.

Solutions

**For Exercises 4 – 7:**

a. Find the x-intercept (if it exists)
b. Find the y-intercept (if it exists)
c. Find another point on the line.
d. Plot the points and sketch the line.

4. $-3x + y = 3$

a. (-1, 0)

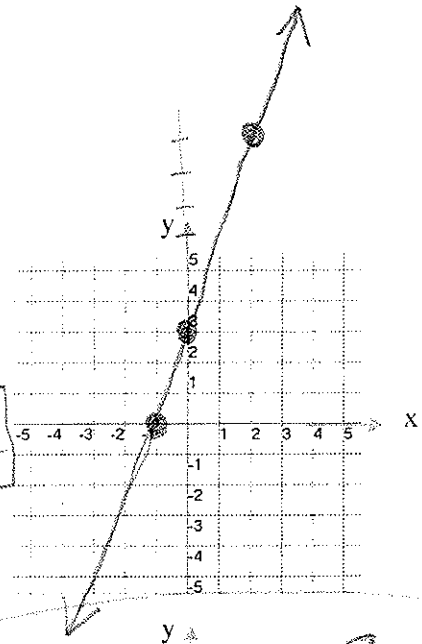
b. (0, 3)

c. (2, 9)

x-intercept
Set y=0, so
-3x = 3
x = -1
=> (-1, 0) is x-intercept

y-intercept
Set x=0, so
y=3.
=> (0, 3) is y-intercept

other point
if x=2,
-3(2) + y = 3
-6 + y = 3
=> (2, 9) y=9 on graph



5. $x - y = 0$

a. (0, 0)

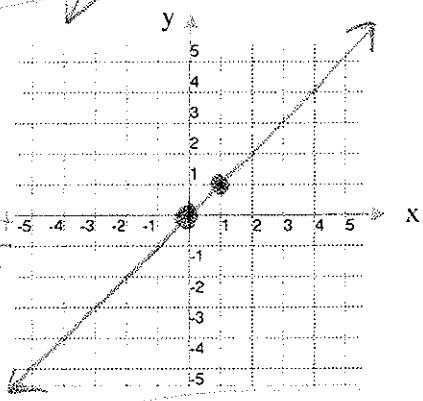
b. (0, 0)

c. (1, 1)

x-intercept
Set y=0, so
x=0
=> (0, 0) is the x-intercept

y-intercept
Set x=0, so
0 - y = 0
-y = 0
y = 0
=> (0, 0) is y-intercept

another point
Let x = 1, so
1 - y = 0
1 = y
=> (1, 1) is on graph



6. $y + 2 = 0$

a. does not exist

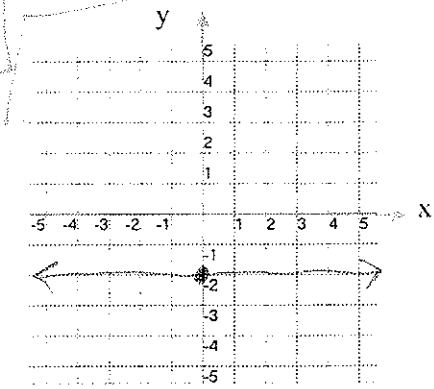
b. (0, -2)

c. (1, -2)

x-intercept
Let y=0, then we get the equation
2 = 0... false!
So there is no x-intercept.

y-intercept
So x=0, we get
y + 2 = 0
y = -2
So y-intercept is (0, -2).

another point
Let x=1, so
y + 2 = 0
y = -2.
So (1, -2) on graph.



7. $x - 4 = -5$

a. (-1, 0)

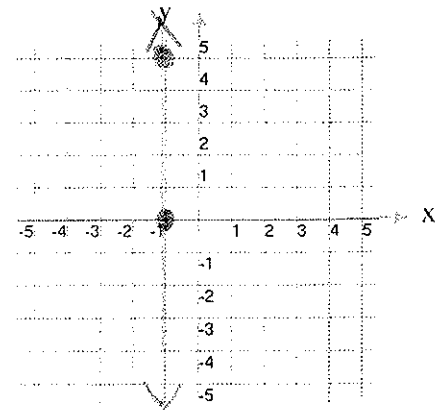
b. does not exist

c. (-1, 5)

x-intercept
Let y=0, then
x - 4 = -5,
x = -1
So (-1, 0) is x-intercept.

y-intercept
Let x=0, then
0 - 4 = -5
false!
So there is no y-intercept.

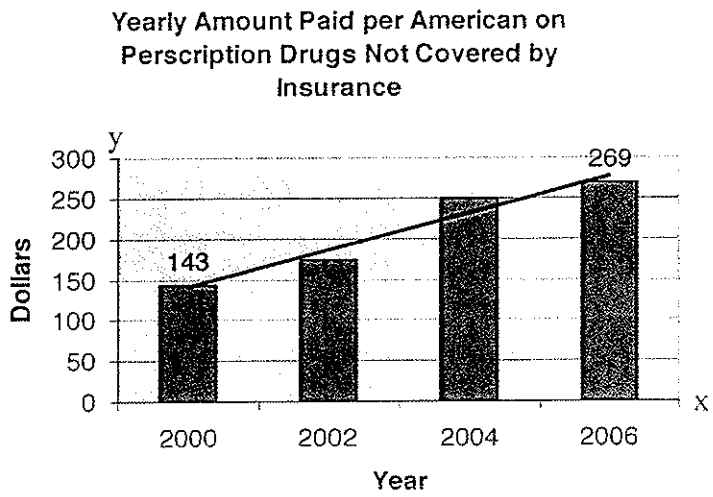
another point
Let y=1, so
x - 4 = -5
x = -1
So (-1, 5) is on graph.



Solutions

## CLASSROOM ACTIVITY 3.3C

1. The graph below depicts the amount of money that Americans spent per year on prescription drugs above what was covered by insurance. Data are given between the years 2000 to 2006.




$$\begin{array}{r} 269 \\ -143 \\ \hline 126 \end{array}$$

a. If the dollar amount is approximated by a linear trend, compute the slope of the line.

$(x_1, y_1) = (2000, 143)$

$(x_2, y_2) = (2006, 269)$

$$\text{Slope} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{269 - 143}{2006 - 2000} = \frac{126}{6}$$

$126/6$

b. Interpret the meaning of the slope in the context of the number of dollars and years.

"$\frac{126}{6}$ $\frac{\text{dollars}}{\text{year}}$"

or

"126 dollars every 6 years"