Chapter 4. Graphing Relations and Functions

Ex. 4.5

Answer 1CU.

Consider an equation $y = 2x + 1$ with domains $\{1, 2, 3, 4\}$ and the set of real numbers.

Make a table. The values of *x* come from the domain. Substitute each value of *x* into the equation to determine the values of *y* in the range.

x	$y = 2x + 1$	y	(x, y)
1	$y = 2(1) + 1$ $= 3$	3	$(1, 3)$
2	$y = 2(2) + 1$ $= 5$	5	$(2, 5)$
3	$y = 2(3) + 1$ $= 7$	7	$(3, 7)$
4	$y = 2(4) + 1$ $= 9$	9	$(4, 9)$

The graph of the equation $y = 2x + 1$ with domain $\{1, 2, 3, 4\}$ represents graph of four points $(1, 3), (2, 5), (3, 7)$, and $(4, 9)$. Whereas the graph of the equation $y = 2x + 1$ with set of real numbers as domain represents a line.

Answer 1RM.

Consider the equation

$y = x + 2$

The object is graph the equation using a graphing calculator in the standard viewing windows.

First turn on the calculator and click on $\boxed{Y=}$ to insert the functions against to Y_1.

Key strokes to insert the equation $y = x + 2$

$\boxed{Y=}$ $\boxed{X,T,\theta,n}$ $\boxed{+}$ $\boxed{2}$

The display of the TI-calculator:

Answer 2CU.

(a) Consider the equation

$5y - 7 = 0$

To write the equations into standard form first rewrite the equation so that both variables are on the same side of the equation.

$5y - 7 = 0$	Original equation
$5y - 7 + 7 = 7$	Add 7 to each side
$5y = 7$	Simplify

The equation is now in standard form $Ax + By = C$, where $A = 0, B = 5,$ and $C = 7$.

Therefore, the equation $\boxed{5y - 7 = 0}$ is **in standard form** with $A = 0$

(c) Consider the equation

$5x = 7y$

To write the equations into standard form first rewrite the equation so that both variables are on the same side of the equation.

$5x = 7y$	Original equation
$5x - 7y = 7y - 7y$	Add $-7y$ to each side
$5x - 7y = 0$	Simplify

The equation is now in standard form $Ax + By = C$, where $A = 5, B = -7,$ and $C = 0$.

Therefore, the equation $\boxed{5x - 7y = 0}$ is **in standard form** with $C = 0$

Answer 2RM.

Consider the equation

$y = 4x + 5$

The object is graph the equation using a graphing calculator in the standard viewing windows.

First turn on the calculator and click on $\boxed{\text{Y} =}$ to insert the functions against to Y_1.

Key strokes to insert the equation $y = 4x + 5$

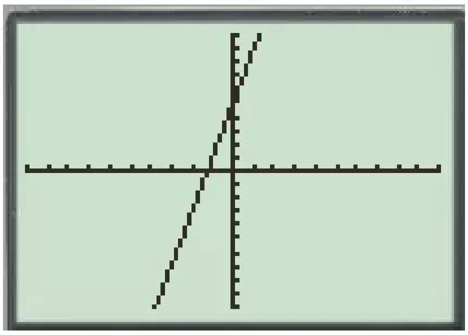
$\boxed{\text{Y} =}\ \boxed{4}\ \boxed{\text{X,T,}\theta\text{,n}}\ \boxed{+}\ \boxed{5}$

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: $\boxed{\text{ZOOM}}\ \boxed{6}$

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

Answer 3CU.

To graph an equation using intercepts, first find the intercepts made be the equation on the coordinate axes.

To find x-intercept, substitute $y = 0$ in the equation and solve for *x*.

If *a* is the *x*-intercept, then the graph of the equation passes through the point $(a,0)$

To find y-intercept, substitute $x = 0$ in in the equation and solve for *y*.

If *b* is the *y*-intercept, then the graph of the equation passes through the point $(0,b)$

After determining the points at which the graph intersects the coordinate axes draw a line through the two points.

Answer 3RM.

Consider the equation

$$y = 6 - 5x$$

The object is graph the equation using a graphing calculator in the standard viewing windows.

First turn on the calculator and click on [Y =] to insert the functions against to Y_1.

Key strokes to insert the equation $y = 6 - 5x$

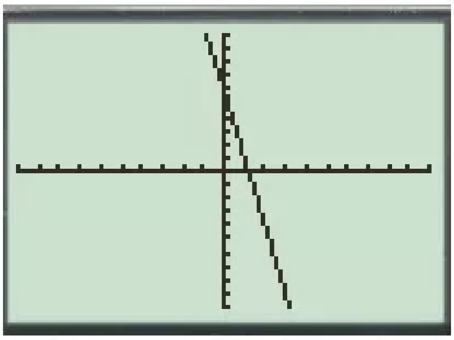
[Y =] [6] [–] [5] [X,T,θ,n]

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: [ZOOM] [6]

The display of the TI-calculator:



$[-10, 10]$ scl: 1 by $[-10, 10]$ scl: 1

Answer 4CU.

Consider the equation

$$x + y^2 = 25$$

The equation has a term y^2 which is not linear, so the equation cannot be written in standard form $Ax + By = C$.

Therefore, the equation $x + y^2 = 25$ is **not a linear equation.**

Answer 4RM.

Consider the equation

$2x + y = 6$

The object is graph the equation using a graphing calculator in the standard viewing windows.

First solve the equation in terms of *y*.

$$2x + y = 6$$

$$-2x + 2x + y = 6 - 2x \quad \text{Subtract } 2x \text{ from both sides}$$

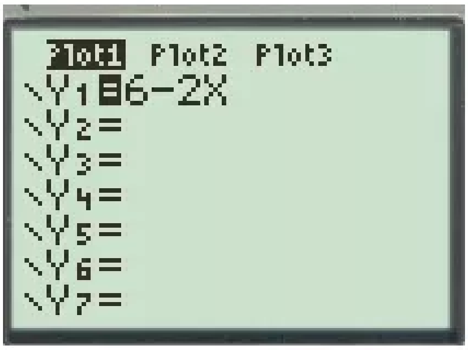
$$y = 6 - 2x \quad \text{Simplify}$$

First turn on the calculator and click on **Y =** to insert the functions against to Y_1.

Key strokes to insert the equation $y = 6 - 2x$

Y = **6** **–** **2** **X,T,θ,n**

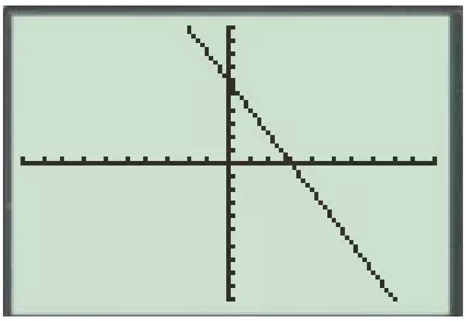
The display of the TI-calculator:



Graph the inserted equation

Key stroke to graph the equation: **ZOOM** **6**

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

Answer 5CU.

Consider the equation

$3y+2=0$

The equation has no term with two variables, so the equation can be written in standard form. To write the equations into standard form first rewrite the equation so that both variables are on the same side of the equation.

$$\begin{aligned} 3y+2&=0 && \text{Original equation} \\ 3y+2-2&=0-2 && \text{Add } -2 \text{ to each side} \\ 3y&=-2 && \text{Simplify} \end{aligned}$$

The equation is now in standard form $Ax+By=C$, where $A=0, B=3,$ and $C=-2$.

Therefore, the equation $3y+2=0$ is **in standard form** and the standard form is

$\boxed{0x+3y=-2}$

Answer 5RM.

Consider the equation

$2x+y=6$

The object is graph the equation using a graphing calculator in the standard viewing windows.

First solve the equation in terms of *y*.

$$\begin{aligned} 2x+y&=6 && \\ -2x+2x+y&=6-2x && \text{Subtract } 2x \text{ from both sides} \\ y&=6-2x && \text{Simplify} \end{aligned}$$

First turn on the calculator and click on $\boxed{\mathrm{Y=}}$ to insert the functions against to Y_1.

Key strokes to insert the equation $y=6-2x$

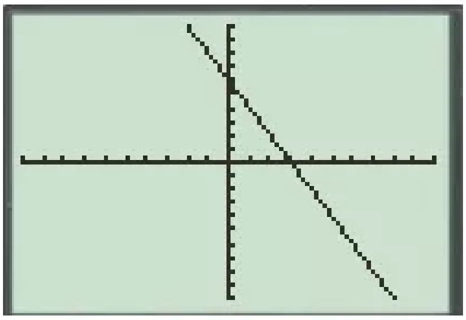
$\boxed{\mathrm{Y=}}$ $\boxed{6}$ $\boxed{-}$ $\boxed{2}$ $\boxed{\mathrm{X,T,\theta,n}}$

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: ZOOM 6

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

Answer 6CU.

Consider the equation

$$\frac{3}{5}x - \frac{2}{5}y = 5$$

The equation has no term with two variables, so the equation can be written in standard form. To write the equations into standard form first rewrite the equation so that both variables are on the same side of the equation.

$\frac{3}{5}x - \frac{2}{5}y = 5$	Original equation
$3x - 2y = 25$	Multiply by 5 each side

The equation is now in standard form $Ax + By = C$, where $A = 3, B = -2,$ and $C = 25$.

Therefore, the equation $\frac{3}{5}x - \frac{2}{5}y = 5$ is **in standard form** and the standard form is

$$\boxed{3x - 2y = 25}$$

Answer 5RM.

Consider the equation

$$x - 4y = 8$$

The object is graph the equation using a graphing calculator in the standard viewing windows.

First solve the equation in terms of *y*.

$x - 4y = 8$	
$-x + x - 4y = 8 - x$	Subtract x from both sides
$-4y = 8 - x$	Simplify
$y = \frac{8 - x}{-4}$	Divide each side by -4

$$y = -2 + \frac{x}{4}$$

First turn on the calculator and click on [Y =] to insert the functions against to Y_1.

Key strokes to insert the equation $y = -2 + \frac{x}{4}$

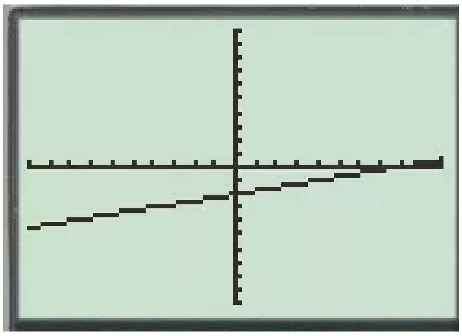
[Y =] [–] [2] [+] [X, T, θ, n] [÷] [4]

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: [ZOOM] [6]

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

Answer 7CU.

Consider the equation

$$x + \frac{1}{y} = 7$$

Multiply each side by *y*.

$$xy + 1 = 7y$$

The equation has a term xy which is not linear, so the equation cannot be written in standard form $Ax + By = C$.

Therefore, the equation $x + \frac{1}{y} = 7$ is **not a linear equation**

Answer 7RM.

Consider the equation

$$y = 5x + 9$$

The object is graph the equation using a graphing calculator.

First solve the equation in terms of *y*.

First turn on the calculator and click on [Y =] to insert the functions against to Y_1.

Key strokes to insert the equation $y = 5x + 9$

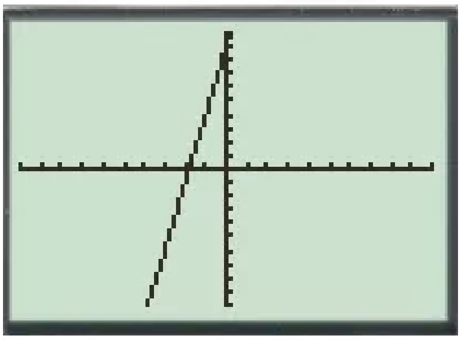
[Y =] [5] [X, T, θ, n] [+] [9]

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: [ZOOM] [6]

The display of the TI-calculator:



$[-10, 10]$ scl: 1 by $[-10, 10]$ scl: 1

It cab ne observed that the *y*-intercept is inside of the viewing window. Therefore the graph is [complete].

Answer 8CU.

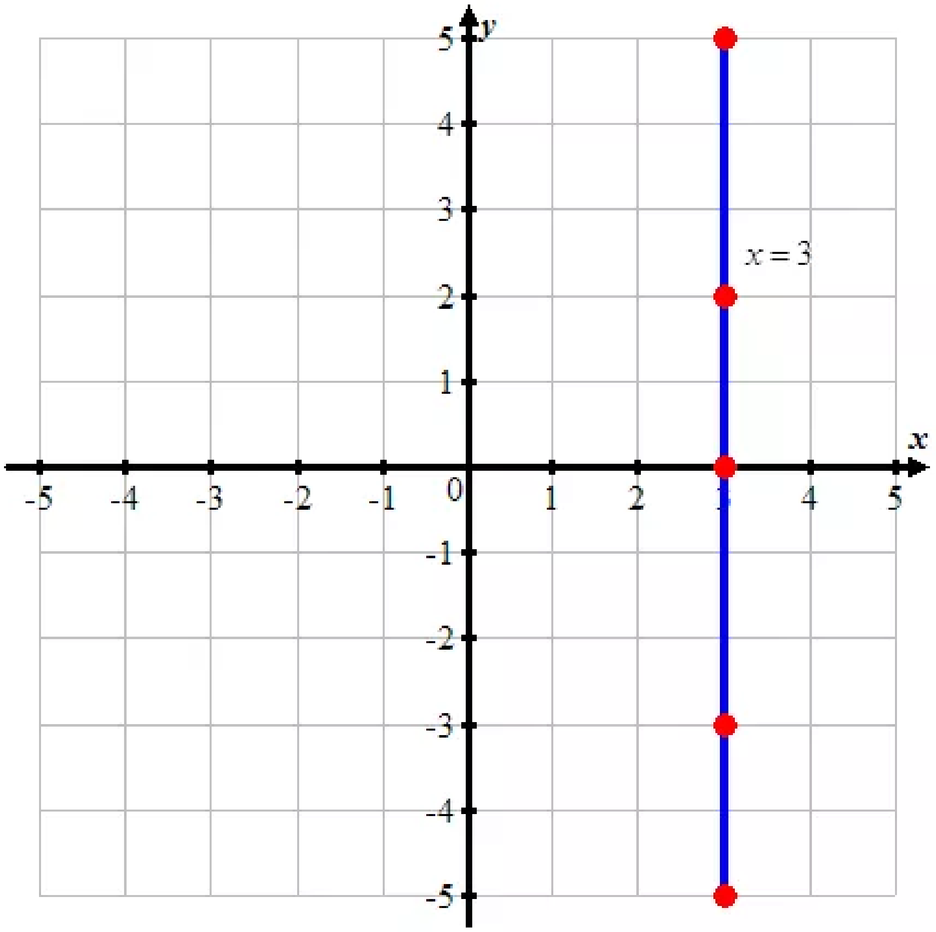
Consider the equation

$x = 3$

Find ordered pairs from the equation by randomly choosing a value for *x*, replacing this value for *x* in the equation, and solving for *y* as shown in the table.

x	y	(x, y)
3	5	$(3, 5)$
3	2	$(3, 2)$
3	0	$(3, 0)$
3	-3	$(3, -3)$
3	-5	$(3, -5)$

Graph the ordered pairs $(3,2),(3,2),(3,0),(3,-3),(3,-5)$ and draw a line through the points. Then the graph appears as shown below



Answer 8RM.

Consider the equation

$y = 10x - 6$

The object is graph the equation using a graphing calculator.

First solve the equation in terms of *y*.

First turn on the calculator and click on $\boxed{Y=}$ to insert the functions against to Y_1.

Key strokes to insert the equation $y = 10x - 6$

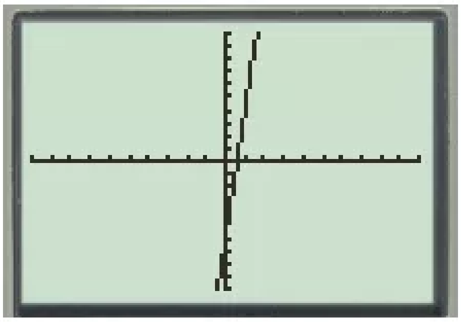
$\boxed{Y=}$ $\boxed{10}$ $\boxed{X,T,\theta,n}$ $\boxed{-}$ $\boxed{6}$

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: $\boxed{\text{ZOOM}}$ $\boxed{6}$

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

It cab ne observed that the *y*-intercept is inside of the viewing window. Therefore the graph is $\boxed{\text{complete}}$.

Answer 9CU.

Consider the equation:

$x - y = 0$

To find x-intercept, substitute $y = 0$ in $x - y = 0$.

$x - 0 = 0$ Simplify

$x = 0$

So, the x-intercept is $(0,0)$.

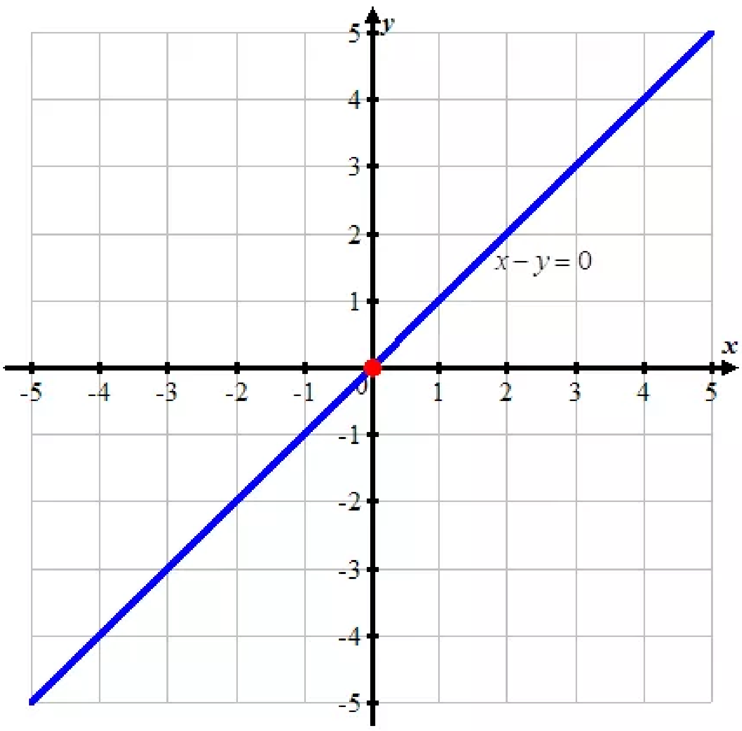
To find y-intercept, substitute $x = 0$ in $x - y = 0$

$0 - y = 0$ Simplify

$y = 0$

So, the y-intercept is $(0,0)$.

Graph the ordered pair $(0,0)$ and draw a line through the points. Then the graph appears as shown below



Answer 9RM.

Consider the equation

$y = 3x - 18$

The object is graph the equation using a graphing calculator.

First solve the equation in terms of *y*.

First turn on the calculator and click on $\boxed{Y=}$ to insert the functions against to Y_1.

Key strokes to insert the equation $y = 3x - 18$

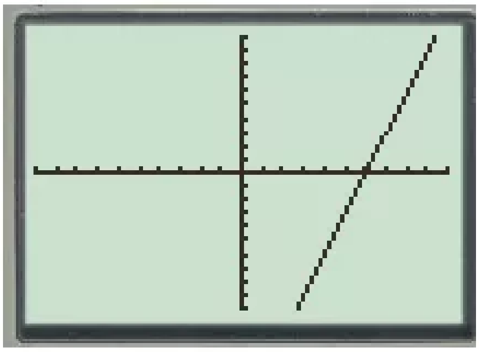
$\boxed{Y=}\ \boxed{3}\ \boxed{X,T,\theta,n}\ \boxed{-}\ \boxed{18}$

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: $\boxed{ZOOM}\ \boxed{6}$

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

It cab ne observed that the *y*-intercept is outside of the viewing window. Therefore the graph is $\boxed{\text{not complete}}$.

To make the graph complete first find the *y*-intercept.

$y = 3x - 18$	Original equation
$y = 3(0) - 18$	Replace x by 0
$y = -18$	Simplify

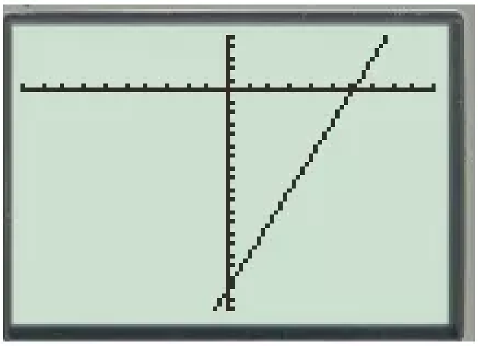
Answer 10CU.

Now choose a viewing window that includes a number less than -18.

Let us choose a viewing window $[-10,10]$ by $[-20,5]$ with a scale of 1 on each axis.

Key strokes to graph the equation:

WINDOW – 10 ENTER 10 ENTER 1 ENTER – 20 ENTER 5 ENTER 1 GRAPH



$[-10,10]$ scl: 1 by $[-20,5]$ scl: 1

Consider the equation:

$y = 2x + 8$

To find x-intercept, substitute $y = 0$ in $y = 2x + 8$.

$0 = 2x + 8$ Add -8 both sides of the equation

$-8 = 2x + 8 - 8$ Simplify

$-8 = 2x$ Divide both sides of the equation by

$-4 = x$

So, the x-intercept is $(-4,0)$.

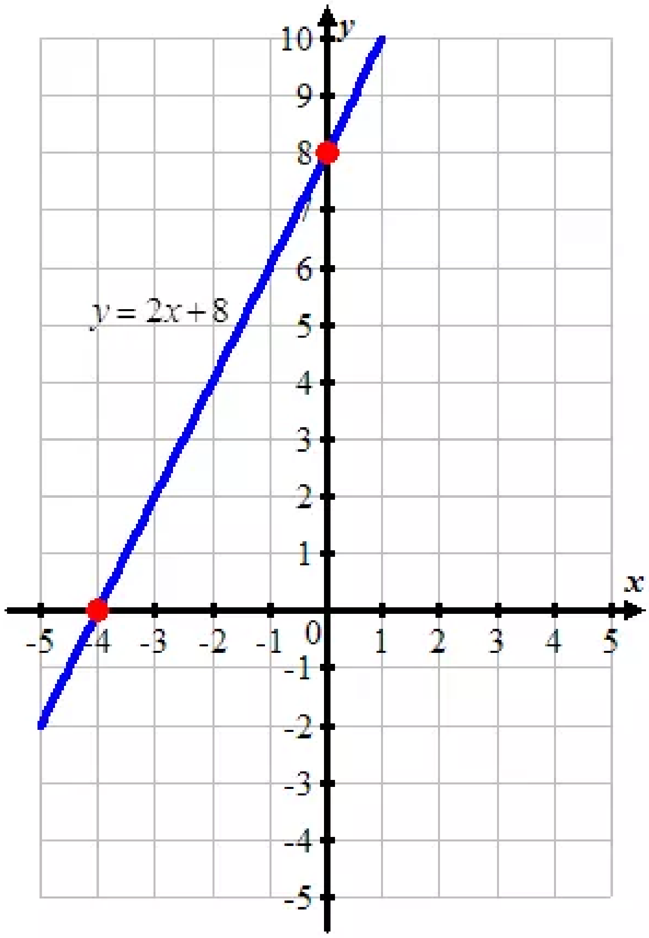
To find y-intercept, substitute $x = 0$ in $y = 2x + 8$

$y = 2(0) + 8$ Simplify

$y = 8$

So, the y-intercept is $(0,8)$.

Graph the ordered pairs $(-4,0),(0,8)$ and draw a line through the points. Then the graph appears as shown below



Answer 10RM.

Consider the equation

$3x - y = 12$

The object is graph the equation using a graphing calculator.

First solve the equation in terms of *y*.

First solve the equation in terms of *y*.

$3x - y = 12$

$-3x + 3x - y = -3x + 12$ Subtract 3*x* from both sides

$-y = -3x + 12$ Simplify

$y = 3x - 12$ Multiply each side by -1

First turn on the calculator and click on [Y =] to insert the functions against to Y_1.

Key strokes to insert the equation $y = 3x - 12$

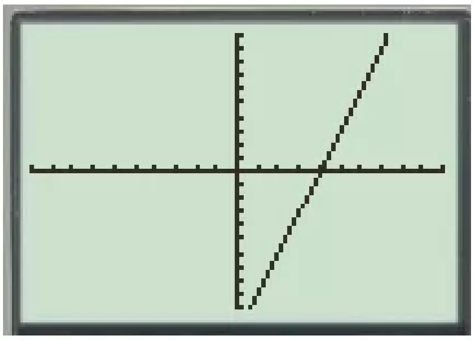
[Y =] [3] [X,T,θ,n] [−] [12]

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: **ZOOM** **6**

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

It cab ne observed that the *y*-intercept is outside of the viewing window. Therefore the graph is **not complete**.

To make the graph complete first find the *y*-intercept.

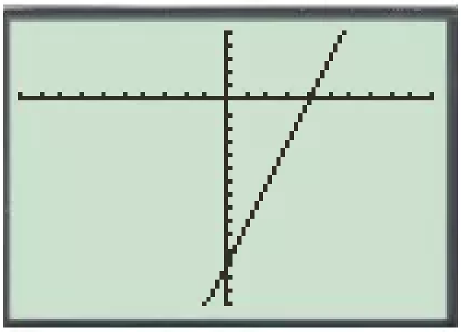
$y=3x-12$	Original equation
$y=3(0)-12$	Replace x by 0
$y=-12$	Simplify

Now choose a viewing window that includes a number less than -12.

Let us choose a viewing window $[-10,10]$ by $[-15,5]$ with a scale of 1 on each axis.

Key strokes to graph the equation:

WINDOW **–** **10** **ENTER** **10** **ENTER** **1** **ENTER** **–** **15** **ENTER** **5** **ENTER** **1** **GRAPH**



$[-10,10]$ scl: 1 by $[-15,5]$ scl: 1

Answer 11CU.

Consider the equation:

$y=-3-x$

To find x-intercept, substitute $y=0$ in $y=-3-x$.

$0=-3-x$ Add 3 both sides of the equation

$3=3-3-x$ Simplify

$3=-x$ Multiply both sides of the equation by -1

$-3=x$

So, the x-intercept is $(-3,0)$.

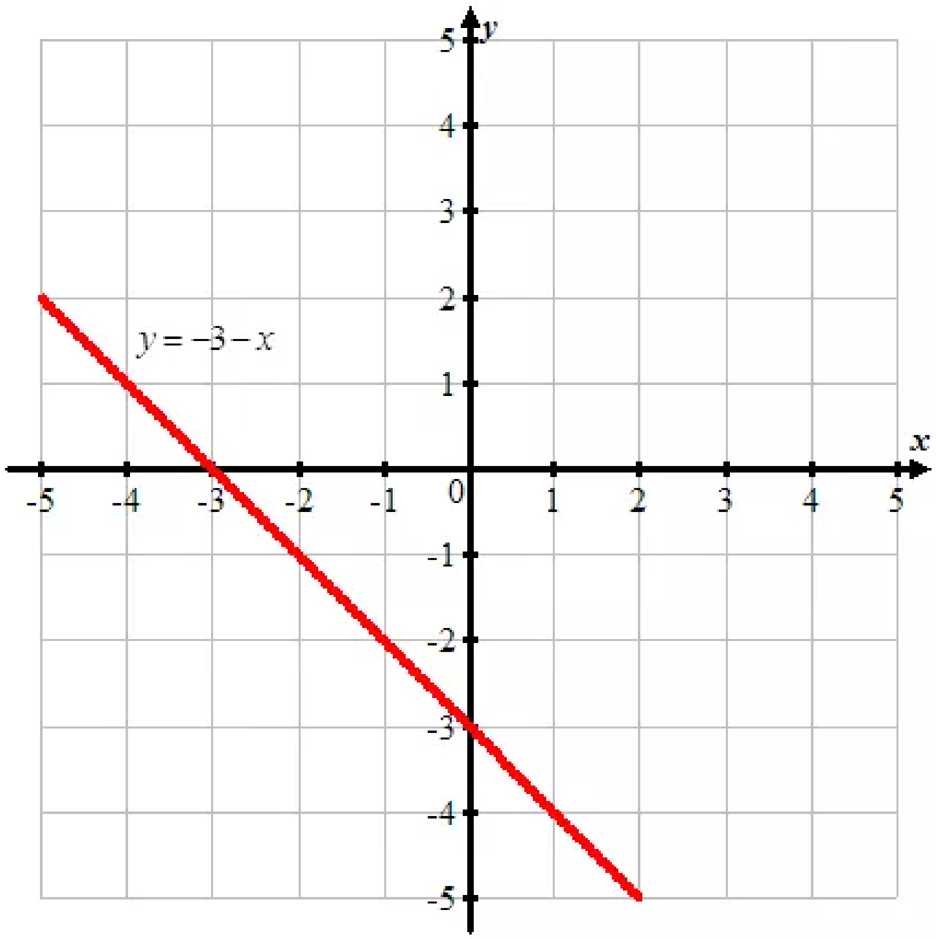
To find y-intercept, substitute $x=0$ in $y=-3-x$

$y=-3-0$ Simplify

$y=-3$

So, the y-intercept is $(0,-3)$.

Graph the ordered pairs $(-3,0),(0,-3)$ and draw a line through the points. Then the graph appears as shown below



Answer 11RM.

Consider the equation

$4x+2y=21$

The object is graph the equation using a graphing calculator.

First solve the equation in terms of *y*.

First solve the equation in terms of *y*.

$4x+2y=21$

$-4x+4x+2y=-4x+21$ Subtract 4*x* from both sides

$2y=-4x+21$ Simplify

$y=-2x+\frac{21}{2}$ Divide each side by 2

First turn on the calculator and click on [Y =] to insert the functions against to Y_1.

Key strokes to insert the equation $y=-2x+\frac{21}{2}$

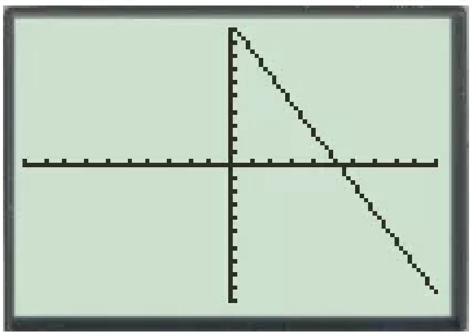
[Y =] [–] [2] [X,T,θ,n] [+] [21] [÷] [2]

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: [ZOOM] [6]

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

It cab ne observed that the y-intercept is outside of the viewing window. Therefore the graph is $\boxed{\text{not complete}}$.

To make the graph complete first find the y-intercept.

$y=-2x+\frac{21}{2}$ Original equation

$y=-2(0)+\frac{21}{2}$ Replace x by 0

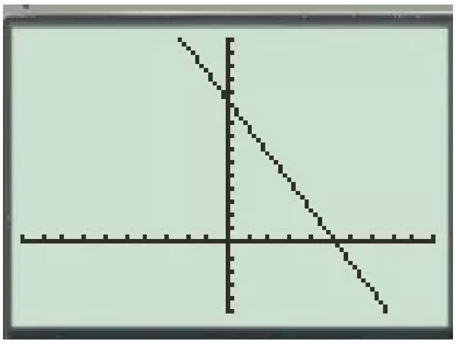
$y=10.5$ Simplify

Now choose a viewing window that includes a number greater than 15.

Let us choose a viewing window $[-10,10]$ by $[-5,15]$ with a scale of 1 on each axis.

Key strokes to graph the equation:

WINDOW – 10 ENTER 10 ENTER 1 ENTER – 5 ENTER 15 ENTER 1 GRAPH



$[-10,10]$ scl: 1 by $[-5,15]$ scl: 1

Answer 12CU.

Consider the equation:

$x+4y=10$

To find x-intercept, substitute $y=0$ in $x+4y=10$.

$x+4(0)=10$ Simplify

$x=10$

So, the x-intercept is $(10,0)$.

To find y-intercept, substitute $x=0$ in $x+4y=10$

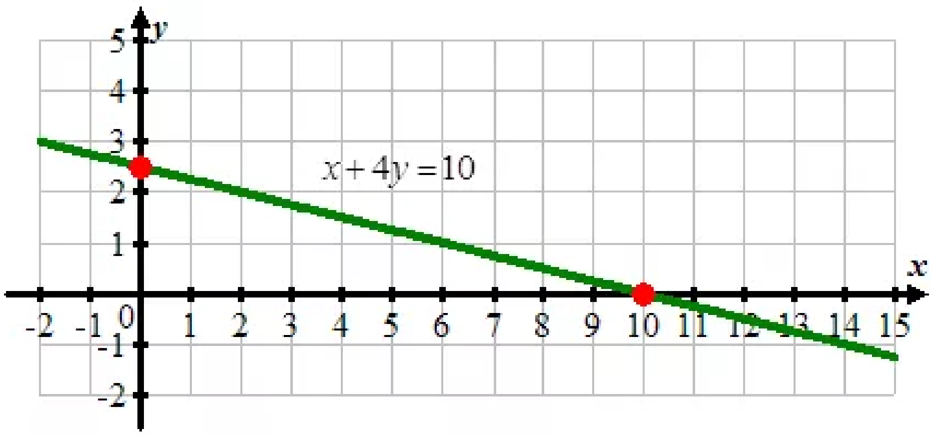
$0+4y=10$ Dividing each side by 4

$y=\frac{10}{4}$ Simplify

$y=\frac{5}{2}$

So, the y-intercept is $\left(0,\frac{5}{2}\right)$.

Graph the ordered pairs $(10,0),\left(0,\frac{5}{2}\right)$ and draw a line through the points. Then the graph appears as shown below



Answer 12RM.

Consider the equation

$3x+5y=-45$

The object is graph the equation using a graphing calculator.

First solve the equation in terms of *y*.

First solve the equation in terms of *y*.

$3x+5y=-45$

$-3x+3x+5y=-3x-45$ Subtract 3*x* from both sides

$5y=-3x-45$ Simplify

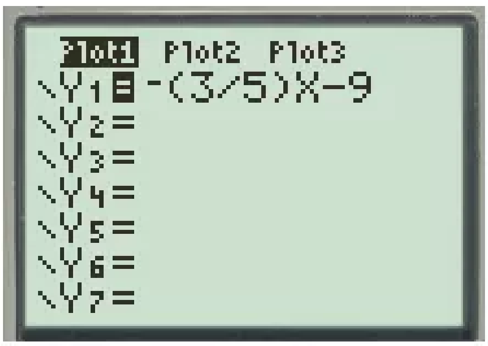
$y=-\frac{3x}{5}-9$ Divide each side by 5

First turn on the calculator and click on **[Y =]** to insert the functions against to Y_1.

Key strokes to insert the equation $y=-\frac{3x}{5}-9$

[Y =] **[–]** **[(]** **[3]** **[÷]** **[5]** **[)]** **[X,T,θ,n]** **[–]** **[9]**

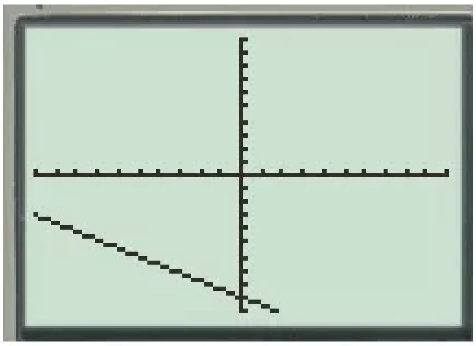
The display of the TI-calculator:



Graph the inserted equation

Key stroke to graph the equation: **ZOOM** **6**

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

It cab ne observed that the *x*-intercept is outside of the viewing window. Therefore the graph is $\boxed{\text{not complete}}$.

To make the graph complete first find the *x*-intercept.

$$y=-\frac{3x}{5}-9 \qquad \text{Original equation}$$

$$0=-\frac{3x}{5}-9 \qquad \text{Replace } y \text{ by } 0$$

$$9=-\frac{3x}{5} \qquad \text{Add 9 each sides}$$

$$9\left(-\frac{5}{3}\right)=x \qquad \text{Multiply each side by } -\frac{5}{3}$$

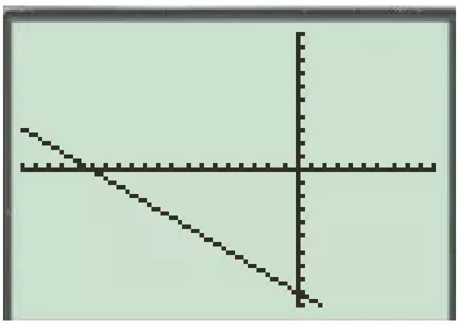
$$-15=x \qquad \text{Simplify}$$

Now choose a viewing window that includes a number less than -15.

Let us choose a viewing window $[-20,10]$ by $[-10,10]$ with a scale of 1 on each axis.

Key strokes to graph the equation:

WINDOW **(–)** **20** **ENTER** **10** **ENTER** **1** **ENTER** **(–)** **10** **ENTER** **10** **ENTER** **1** **GRAPH**



$[-20,10]$ scl: 1 by $[-10,10]$ scl: 1

Answer 13CU.

Consider the equation:

$4x+3y=12$

To find x-intercept, substitute $y=0$ in $4x+3y=12$.

$$4x+3(0)=12$$
$$4x+0=12 \quad \text{Simplify}$$
$$4x=12 \quad \text{Add}$$
$$x=3 \quad \text{Divide each side by 4}$$

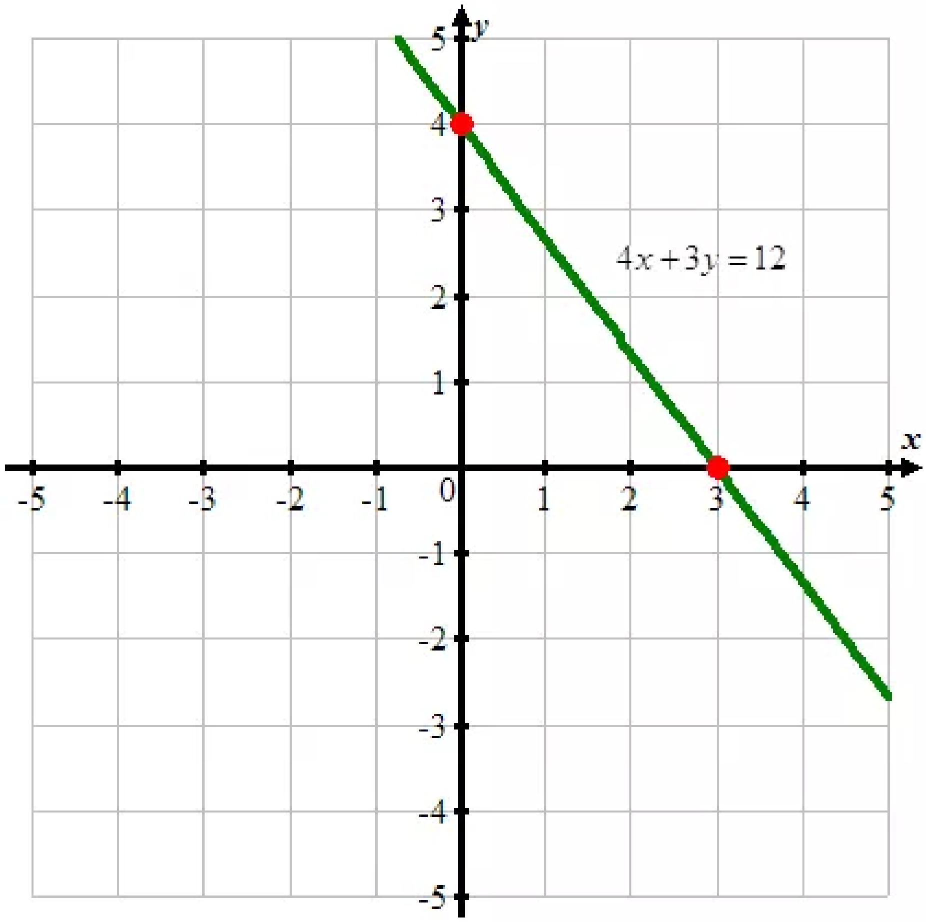
So, the x-intercept is $(3,0)$.

To find y-intercept, substitute $x=0$ in $4x+3y=12$

$$4(0)+3y=12$$
$$0+3y=12 \quad \text{Simplify}$$
$$3y=12 \quad \text{Add}$$
$$x=4 \quad \text{Divide each side by 3}$$

So, the y-intercept is $(0,4)$.

Graph the ordered pairs $(3,0),(0,4)$ and draw a line through the points. Then the graph appears as shown below



Answer 13RM.

Consider the equation

$$y = 2x + b$$

Choose $b = -1$, then the given equation becomes

$$y = 2x - 1$$

The object is graph the equation using a graphing calculator in the standard viewing windows.

First turn on the calculator and click on $\boxed{\mathbf{Y=}}$ to insert the functions against to Y_1.

Key strokes to insert the equation $y = 2x - 1$

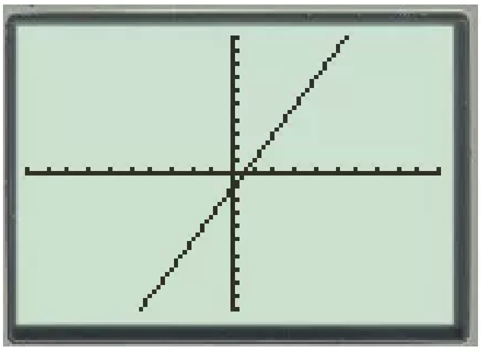
$\boxed{\mathbf{Y=}}\ \boxed{\mathbf{2}}\ \boxed{\mathbf{X,T,\theta,n}}\ \boxed{\mathbf{-}}\ \boxed{\mathbf{1}}$

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: $\boxed{\mathbf{ZOOM}}\ \boxed{\mathbf{6}}$

The display of the TI-calculator:



$[-10, 10]$ scl: 1 by $[-10, 10]$ scl: 1

Choose $b=-7$, then the given equation becomes

$y=2x-7$

The object is graph the equation using a graphing calculator in the standard viewing windows.

First turn on the calculator and click on $\boxed{\text{Y}=}$ to insert the functions against to Y_1.

Key strokes to insert the equation $y=2x-7$

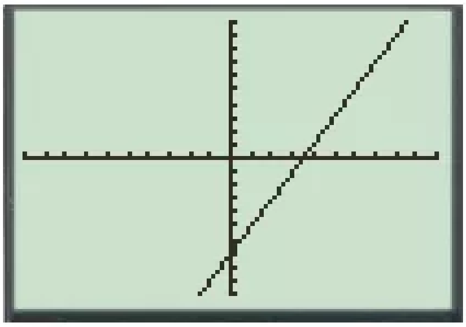
$\boxed{\text{Y}=}\boxed{2}\ \boxed{\text{X},\text{T},\theta,\text{n}}\ \boxed{-}\ \boxed{7}$

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: $\boxed{\text{ZOOM}}\ \boxed{6}$

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

Choose $b=6$, then the given equation becomes

$y=2x+6$

The object is graph the equation using a graphing calculator in the standard viewing windows.

First turn on the calculator and click on $\boxed{\text{Y}=}$ to insert the functions against to Y_1.

Key strokes to insert the equation $y=2x+6$

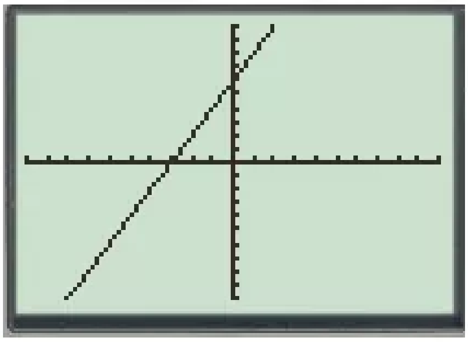
$\boxed{\text{Y}=}\boxed{2}\ \boxed{\text{X},\text{T},\theta,\text{n}}\ \boxed{+}\ \boxed{6}$

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: ZOOM 6

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

Choose $b=9$, then the given equation becomes

$y=2x+9$

The object is graph the equation using a graphing calculator in the standard viewing windows.

First turn on the calculator and click on Y = to insert the functions against to Y_1.

Key strokes to insert the equation $y=2x+9$

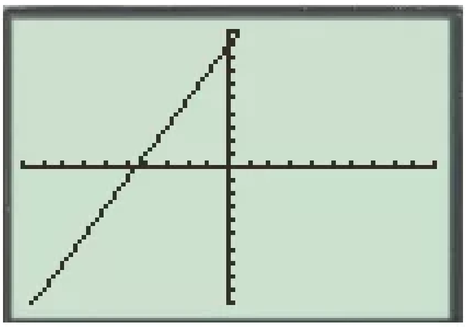
Y = 2 X, T, θ, n + 9

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: ZOOM 6

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

Answer 14CU.

Consider the equation:

$$c = 0.75m + 2.25$$

To find m-intercept, substitute $c = 0$ in $c = 0.75m + 2.25$.

$0 = 0.75m + 2.25$

$-2.25 = 0.75m + 2.25 - 2.25$ Add -2.25 each side

$-2.25 = 0.75m$ Simplify

$-3 = m$ Divide each side by 0.75

So, the m-intercept is -3 and the graph intersects the m-axis at $(-3, 0)$.

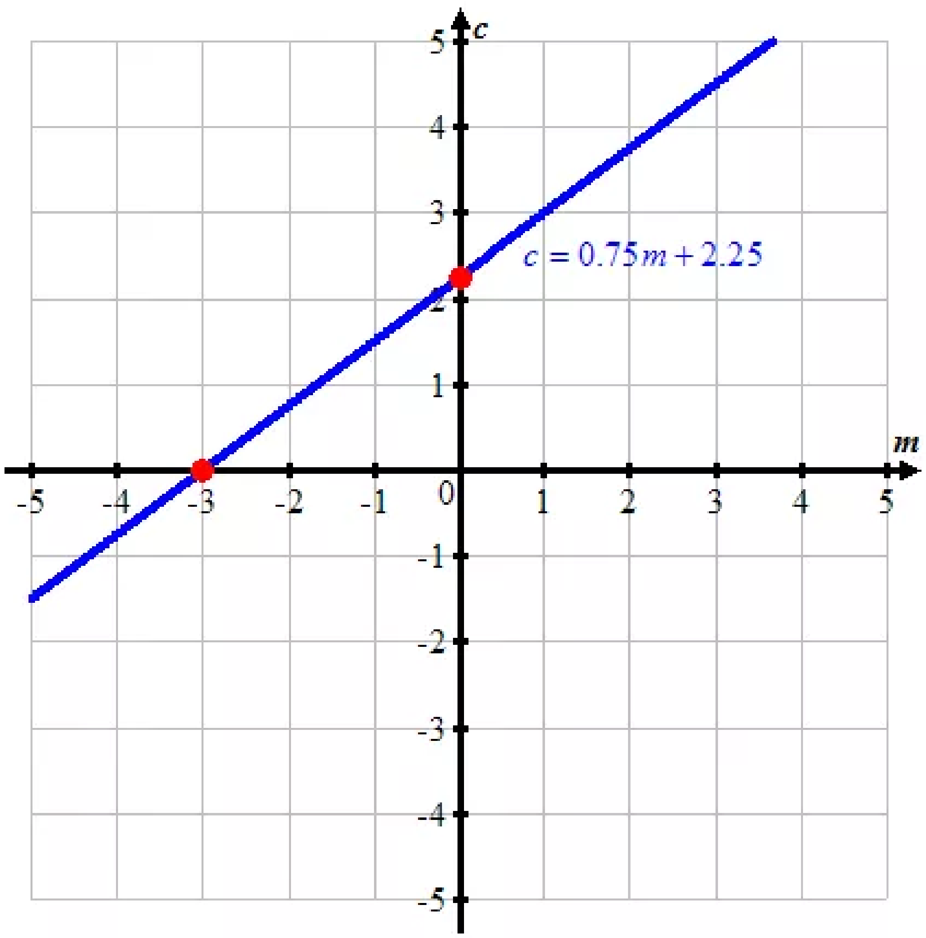
To find c-intercept, substitute $m = 0$ in $c = 0.75m + 2.25$

$c = 0.75(0) + 2.25$

$c = 2.25$ Simplify

So, the c-intercept is $(0, 2.25)$.

Graph the ordered pairs $(-3, 0), (0, 2.25)$ and draw a line through the points. Then the graph appears as shown below



Answer 14RM.

Consider the equation

$y = 2x + b$

The standard viewing window is $[-10,10]$ by $[-10,10]$ with a scale of 1 on the both axes.

The graph of $y = 2x + b$ will be complete in the standard viewing window, if the origin, *x*-axis, and *y*-axis of the graph appears in the standard viewing.

The graph of $y = 2x + b$ will be complete in standard viewing window, if the values of *b* are

$\boxed{-10,-9,-8,-7,-6,-5,-4,-3,-2,-1,0,1,2,3,4,5,6,7,8,9,10}$

The following are some examples which satisfies the above conclusion.

Choose $b = -1$, then the given equation becomes

$y = 2x - 1$

The object is graph the equation using a graphing calculator in the standard viewing windows.

First turn on the calculator and click on [Y =] to insert the functions against to Y_1.

Key strokes to insert the equation $y = 2x - 1$

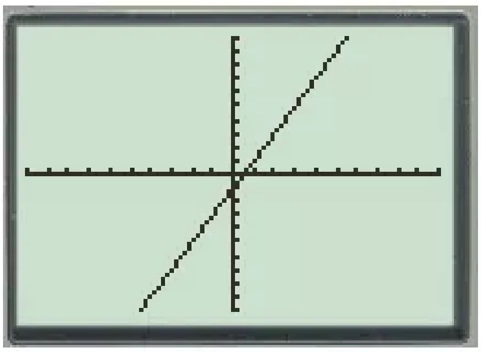
[Y =] [2] [X,T,θ,n] [–] [1]

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: [ZOOM] [6]

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

The graph of $y = 2x - 1$ is complete because all of the points are visible.

Choose $b=-7$, then the given equation becomes

$y=2x-7$

The object is graph the equation using a graphing calculator in the standard viewing windows.

First turn on the calculator and click on $\boxed{\mathbf{Y=}}$ to insert the functions against to Y_1.

Key strokes to insert the equation $y=2x-7$

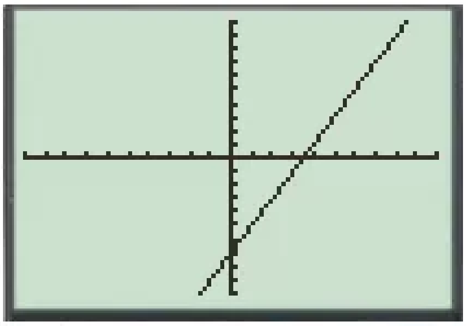
$\boxed{\mathbf{Y=}}\boxed{2}\boxed{\mathbf{X,T,\theta,n}}\boxed{-}\boxed{7}$

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: $\boxed{\mathbf{ZOOM}}\boxed{6}$

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

The graph of $y=2x-7$ is complete because all of the points are visible.

Choose $b=6$, then the given equation becomes

$y=2x+6$

The object is graph the equation using a graphing calculator in the standard viewing windows.

First turn on the calculator and click on $\boxed{\mathbf{Y=}}$ to insert the functions against to Y_1.

Key strokes to insert the equation $y=2x+6$

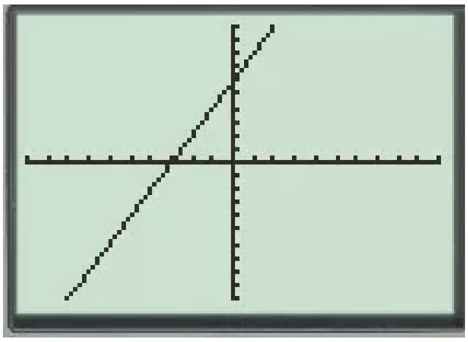
$\boxed{\mathbf{Y=}}\boxed{2}\boxed{\mathbf{X,T,\theta,n}}\boxed{+}\boxed{6}$

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: ZOOM 6

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

The graph of $y=2x+6$ is complete because all of the points are visible.

Choose $b=9$, then the given equation becomes

$y=2x+9$

The object is graph the equation using a graphing calculator in the standard viewing windows.

First turn on the calculator and click on Y = to insert the functions against to Y_1.

Key strokes to insert the equation $y=2x+9$

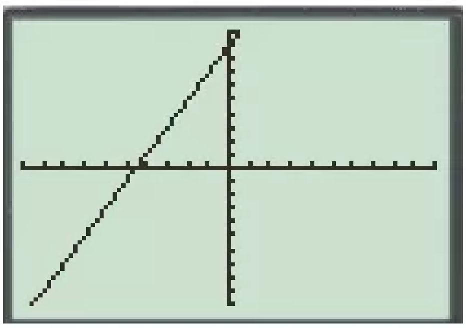
Y = 2 X,T,θ,n + 9

The display of the TI-calculator:

Graph the inserted equation

Key stroke to graph the equation: ZOOM 6

The display of the TI-calculator:



$[-10,10]$ scl: 1 by $[-10,10]$ scl: 1

The graph of $y=2x+9$ $y=2x+9$ is complete because all of the points are visible.

Answer 15CU.

If *m* is the number of mails traveled, then the cost of the fare charged by a taxi company is $c = 0.75m + 2.25$.

The object is to find the taxi fare cost for a travel of 18 miles.

Replace *m* by 18 in equation $c = 0.75m + 2.25$

$c = 0.75(18) + 2.25$

$c = 13.5 + 2.25$ Multiply

$c = 15.75$ Add

Therefore, the taxi fare cost to travel 18 miles is $\boxed{\$15.75}$

Answer 15RM.

Consider the equation

$y = 2x + b$

To find the *y*-intercept of the graph of $y = 2x + b$, replace *x* by 0.

$y = 2x + b$ Original equation

$y = 2(0) + b$ Replace x by 0

$y = b$ Simplify

Thus, the value of *b* is the *y*-intercept of the graph of the equation $y = 2x + b$.

Answer 16PA.

Consider the equation

$3x = 5y$

The equation has no term with two variables, so the equation can be written in standard form.
To write the equations into standard form first rewrite the equation so that both variables are on the same side of the equation.

$3x = 5y$ Original equation

$3x - 5y = 5y - 5y$ Add $-5y$ to each side

$3x - 5y = 0$ Simplify

The equation is now in standard form $Ax + By = C$, where $A = 3, B = -5,$ and $C = 0$.

Therefore, the equation $3x = 5y$ is **in standard form** and the standard form is $\boxed{3x - 5y = 0}$

Answer 17PA.

Consider the equation

$6-y=2x$

The equation has no term with two variables, so the equation can be written in standard form. To write the equations into standard form first rewrite the equation so that both variables are on the same side of the equation.

$$\begin{aligned} 6-y&=2x && \text{Original equation} \\ -2x+6-y&=2x-2x && \text{Add } -2x \text{ to each side} \\ -2x+6-y&=0 && \text{Simplify} \\ -2x+6-6-y&=0-6 && \text{Add } -6 \text{ to each side} \\ -2x-y&=-6 && \text{Simplify} \\ 2x+y&=6 && \text{Multiply each side by } -1 \end{aligned}$$

The equation is now in standard form $Ax+By=C$, where $A=2, B=1,$ and $C=6$.

Therefore, the equation $6-y=2x$ is **in standard form** and the standard form is $\boxed{2x+y=6}$

Answer 18PA.

Consider the equation

$6xy+3x=4$

The equation has a term xy which is not linear, so the equation cannot be written in standard form $Ax+By=C$.

Therefore, the equation $6xy+3x=4$ is **not a linear equation.**

Answer 19PA.

Consider the equation

$y+5=0$

The equation has no term with two variables, so the equation can be written in standard form. To write the equations into standard form first rewrite the equation so that both variables are on the same side of the equation.

$$\begin{aligned} y+5&=0 && \text{Original equation} \\ y+5-5&=0-5 && \text{Add } -5 \text{ to each side} \\ y&=-5 && \text{Simplify} \end{aligned}$$

The equation is now in standard form $Ax+By=C$, where $A=0, B=1,$ and $C=-5$.

Therefore, the equation $y+5=0$ is **in standard form** and the standard form is $\boxed{0x+y=-5}$

Answer 20PA.

Consider the equation

$$7y = 2x + 5x$$

The equation has no term with two variables, so the equation can be written in standard form. To write the equations into standard form first rewrite the equation so that both variables are on the same side of the equation.

$7y = 2x + 5x$	Original equation
$7y = 7x$	Add
$-7x + 7y = -7x + 7x$	Add $-7x$ each side
$-7x + 7y = 0$	Simplify
$x - y = 0$	Divide each side by -7

The equation is now in standard form $Ax + By = C$, where $A = 1, B = -1,$ and $C = 0$.

Therefore, the equation $7y = 2x + 5x$ is **in standard form** and the standard form is $\boxed{x - y = 0}$

Answer 21PA.

Consider the equation

$$y = 4x^2 - 1$$

The equation has a term x^2 which is not linear, so the equation cannot be written in standard form $Ax + By = C$.

Therefore, the equation $y = 4x^2 - 1$ is **not a linear equation.**

Answer 22PA.

Consider the equation

$$\frac{3}{x} + \frac{4}{y} = 2$$

Multiply each side by xy

$$(xy)\frac{3}{x} + (xy)\frac{4}{y} = 2xy$$

$$3y + 4x = 2xy$$

The equation has a term xy which is not linear, so the equation cannot be written in standard form $Ax + By = C$.

Therefore, the equation $\frac{3}{x} + \frac{4}{y} = 2$ is **not a linear equation**

Answer 23PA.

Consider the equation

$$\frac{3}{5}x-\frac{2}{5}y=5$$

The equation has no term with two variables, so the equation can be written in standard form. To write the equations into standard form first rewrite the equation so that both variables are on the same side of the equation.

$\frac{3}{5}x-\frac{2}{5}y=5$	Original equation
$3x-2y=25$	Multiply by 5 each side

The equation is now in standard form $Ax+By=C$, where $A=3, B=-2,$ and $C=25$.

Therefore, the equation $\frac{3}{5}x-\frac{2}{5}y=5$ is **in standard form** and the standard form is

$$\boxed{3x-2y=25}$$

Answer 24PA.

Consider the equation

$$7n-8m=4-2m$$

The equation has no term with two variables, so the equation can be written in standard form. To write the equations into standard form first rewrite the equation so that both variables are on the same side of the equation.

$7n-8m=4-2m$	Original equation
$7n-8m+2m=4-2m+2m$	Add $2m$ each side
$7n-6m=4$	Simplify

The equation is now in standard form $An+Bm=C$, where $A=7, B=-6,$ and $C=4$.

Therefore, the equation $7n-8m=4-2m$ is **in standard form** and the standard form is

$$\boxed{7n-6m=4}$$

Answer 25PA.

Consider the equation

$3a+b-2=b$

The equation has no term with two variables, so the equation can be written in standard form.
To write the equations into standard form first rewrite the equation so that both variables are on the same side of the equation.

$3a+b-2=b$	Original equation
$3a+b-2-b=b-b$	Add $-b$ each side
$3a-2=0$	Simplify
$3a-2+2=2$	Add 2 each side
$3a=2$	Simplify

The equation is now in standard form $Aa+Bb=C$, where $A=3, B=0,$ and $C=2$.

Therefore, the equation $3a+b-2=b$ is **in standard form** and the standard form is $\boxed{3a+0b=2}$

Answer 26PA.

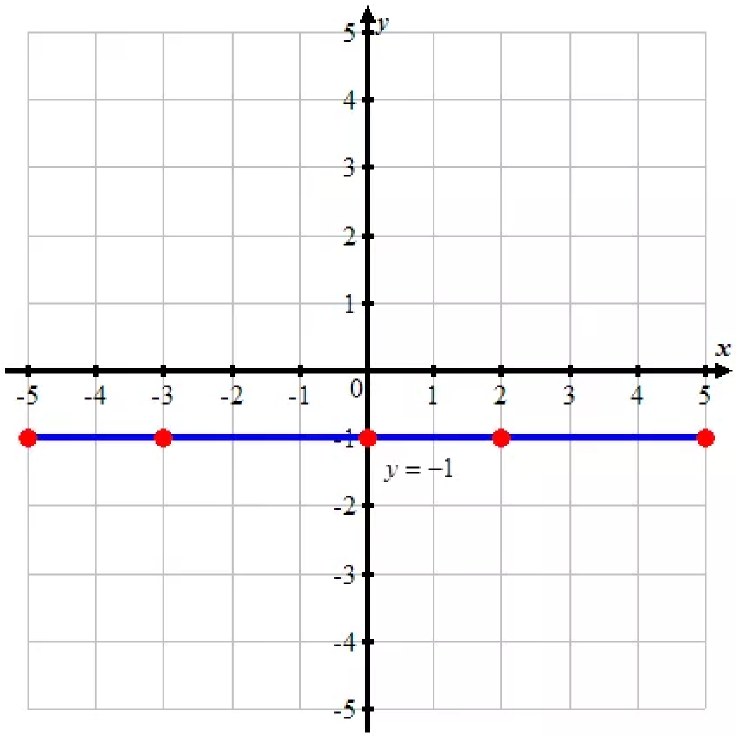
Consider the equation

$y=-1$

Find ordered pairs from the equation by randomly choosing a value for *x*, replacing this value for *x* in the equation, and solving for *y* as shown in the table.

x	y	(x,y)
5	-1	$(5,-1)$
2	-1	$(2,-1)$
0	-1	$(0,-1)$
-3	-1	$(-3,-1)$
-5	-1	$(-5,-1)$

Graph the ordered pairs $(5,-1),(2,-1),(0,-1),(-3,-1),(-5,-1)$ and draw a line through the points. Then the graph appears as shown below.



Answer 27PA.

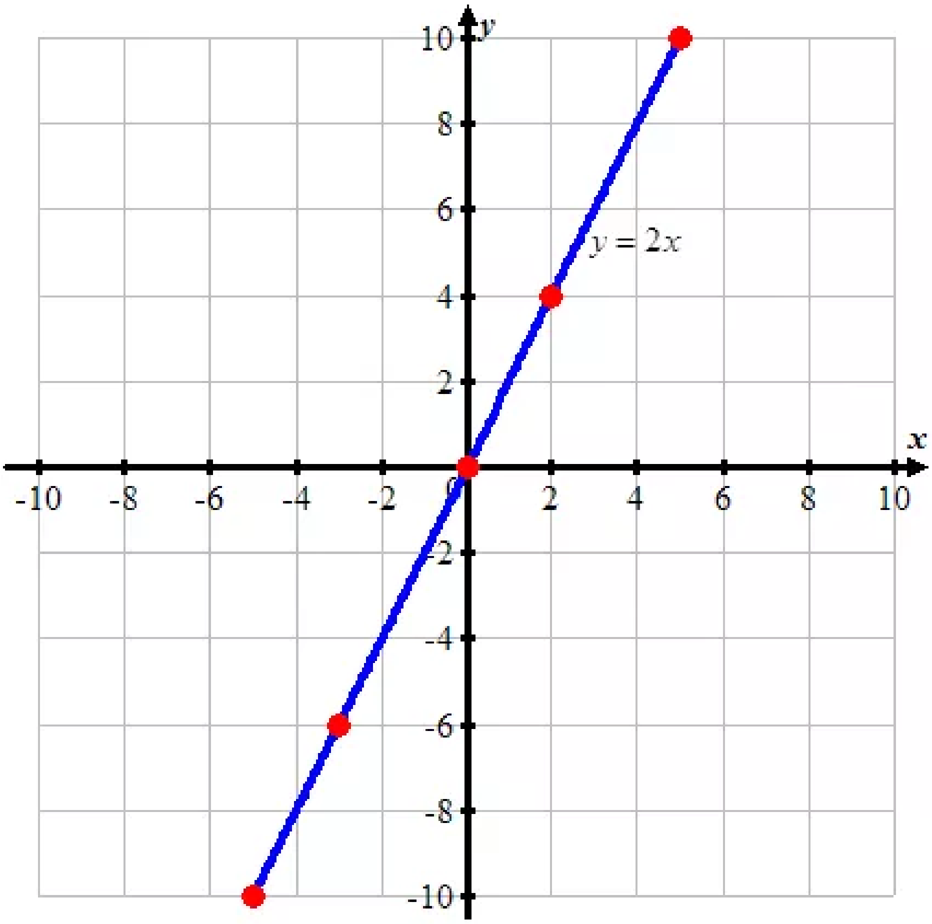
Consider the equation

$y = 2x$

Find ordered pairs from the equation by randomly choosing a value for *x*, replacing this value for *x* in the equation, and solving for *y* as shown in the table.

x	y	(x, y)
5	10	$(5,10)$
2	4	$(2,4)$
0	0	$(0,0)$
-3	-6	$(-3,-6)$
-5	-10	$(-5,-10)$

Graph the ordered pairs $(5,10),(2,4),(0,0),(-3,-6),(-5,-10)$ and draw a line through the points. Then the graph appears as shown below.



Answer 28PA.

Consider the equation:

$y = 5 - x$

To find x-intercept, substitute $y = 0$ in $y = 5 - x$.

$0 = 5 - x$

$x = 5 - x + x$ Add x each side

$x = 5$ Simplify

So, the x-intercept is $(5,0)$.

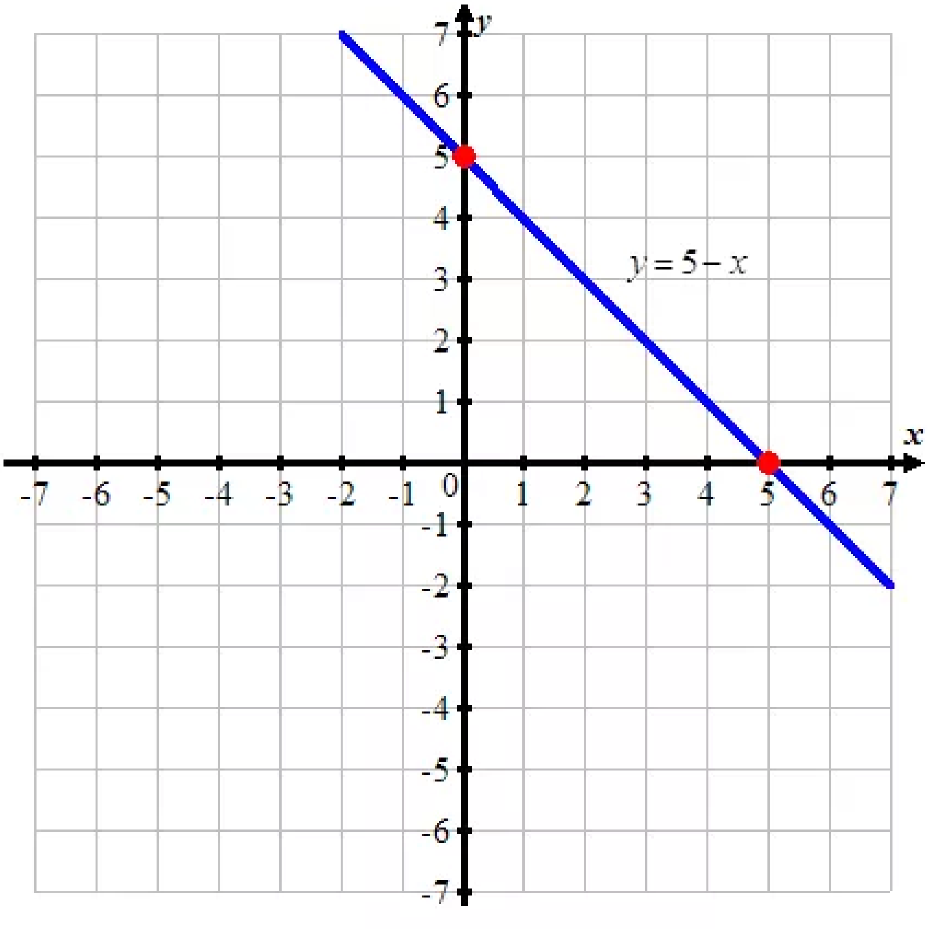
To find y-intercept, substitute $x=0$ in $y=5-x$

$y=5-0$

$y=5$ Simplify

So, the y-intercept is $(0,5)$.

Graph the ordered pairs $(5,0),(0,5)$ and draw a line through the points. Then the graph appears as shown below



Answer 29PA.

Consider the equation:

$y=2x-8$

To find x-intercept, substitute $y=0$ in $y=2x-8$.

$$0=2x-8$$

$$-2x=-2x+2x-8 \quad \text{Add } -2x \text{ each side}$$

$$-2x=-8 \quad \text{Simplify}$$

$$x=4 \quad \text{Divide each side by } -2$$

So, the x-intercept is $(4,0)$.

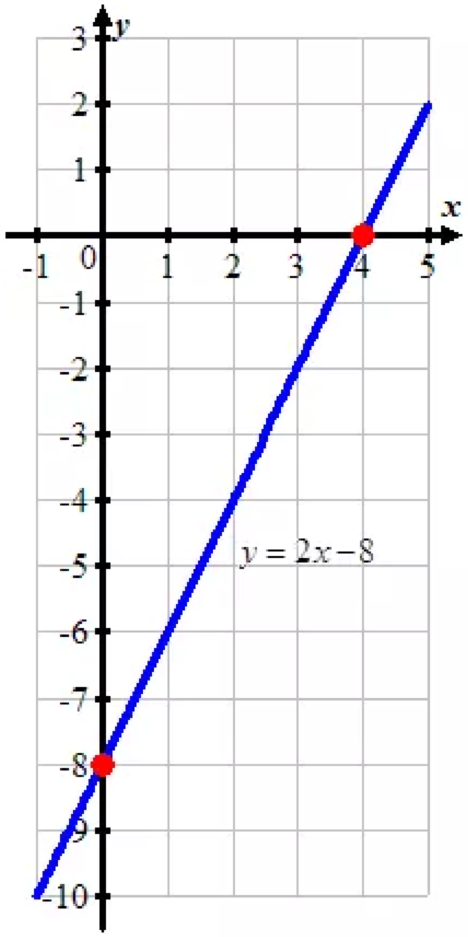
To find y-intercept, substitute $x=0$ in $y=2x-8$

$y=2(0)-8$

$y=-8$ Simplify

So, the y-intercept is $(0,-8)$.

Graph the ordered pairs $(4,0),(0,-8)$ and draw a line through the points. Then the graph appears as shown below



Answer 30PA.

Consider the equation:

$y = 4 - 3x$

To find x-intercept, substitute $y = 0$ in $y = 4 - 3x$.

$0 = 4 - 3x$

$3x = 4 - 3x + 3x$ Add 3x each side

$3x = 4$ Simplify

$x = \frac{4}{3}$ Divide each side by 3

So, the x-intercept is $\left(\frac{4}{3}, 0\right)$.

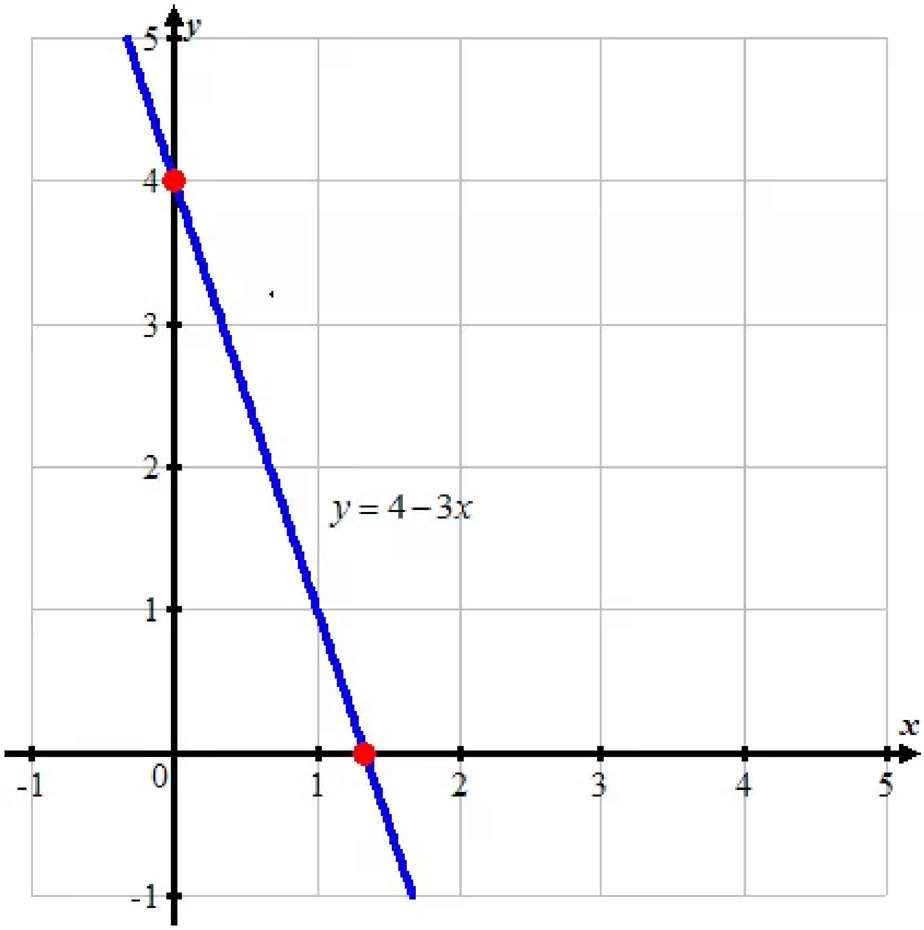
To find y-intercept, substitute $x = 0$ in $y = 4 - 3x$

$y = 4 - 0$

$y = 4$ Simplify

So, the y-intercept is $(0,4)$.

Graph the ordered pairs $\left(\frac{4}{3},0\right),(0,4)$ and draw a line through the points. Then the graph appears as shown below



Answer 31PA.

Consider the equation:

$$y = x - 6$$

To find x-intercept, substitute $y = 0$ in $y = x - 6$.

$$0 = x - 6$$
$$-x = -x + x - 6 \quad \text{Add } -x \text{ each side}$$
$$-x = -6 \quad \text{Simplify}$$
$$x = 6 \quad \text{Multiply each side by } -1$$

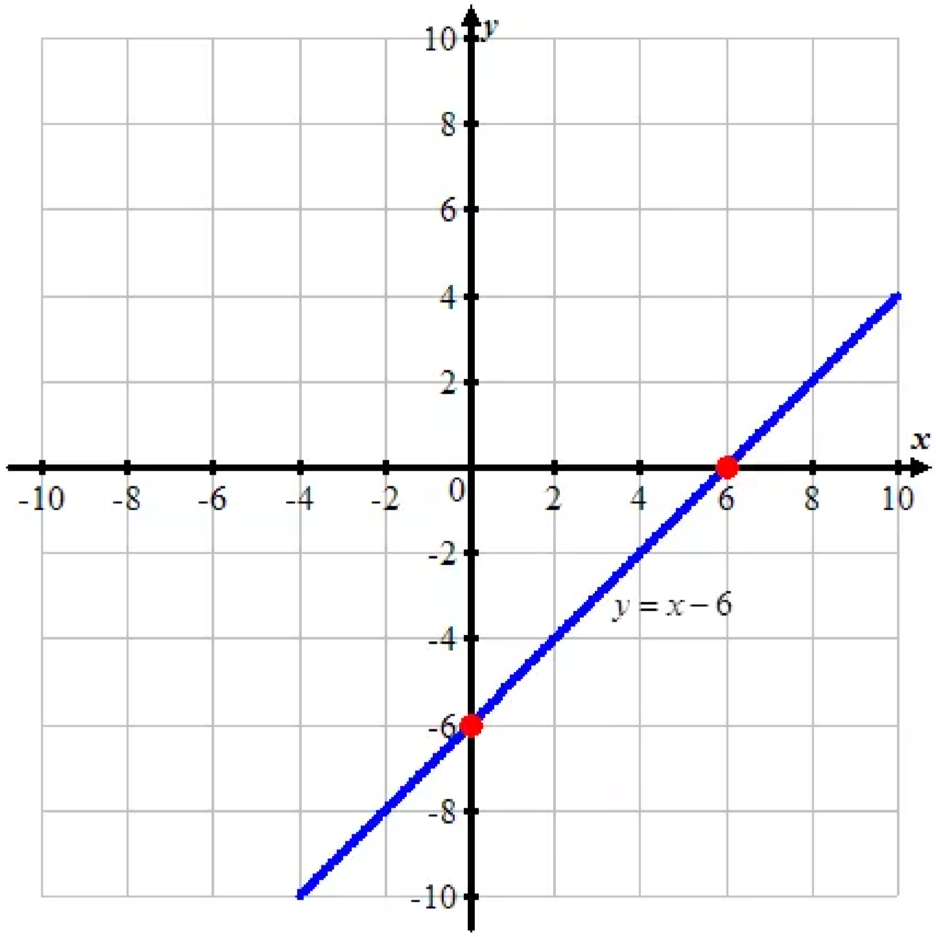
So, the x-intercept is $(6,0)$.

To find y-intercept, substitute $x = 0$ in $y = x - 6$

$$y = 0 - 6$$
$$y = -6 \quad \text{Simplify}$$

So, the y-intercept is $(0,-6)$.

Graph the ordered pairs $(6,0),(0,-6)$ and draw a line through the points. Then the graph appears as shown below



Answer 32PA.

Consider the equation:

$y = x - 6$

To find x-intercept, substitute $y = 0$ in $y = x - 6$.

$0 = x - 6$	
$-x = -x + x - 6$	Add $-x$ each side
$-x = -6$	Simplify
$x = 6$	Multiply each side by -1

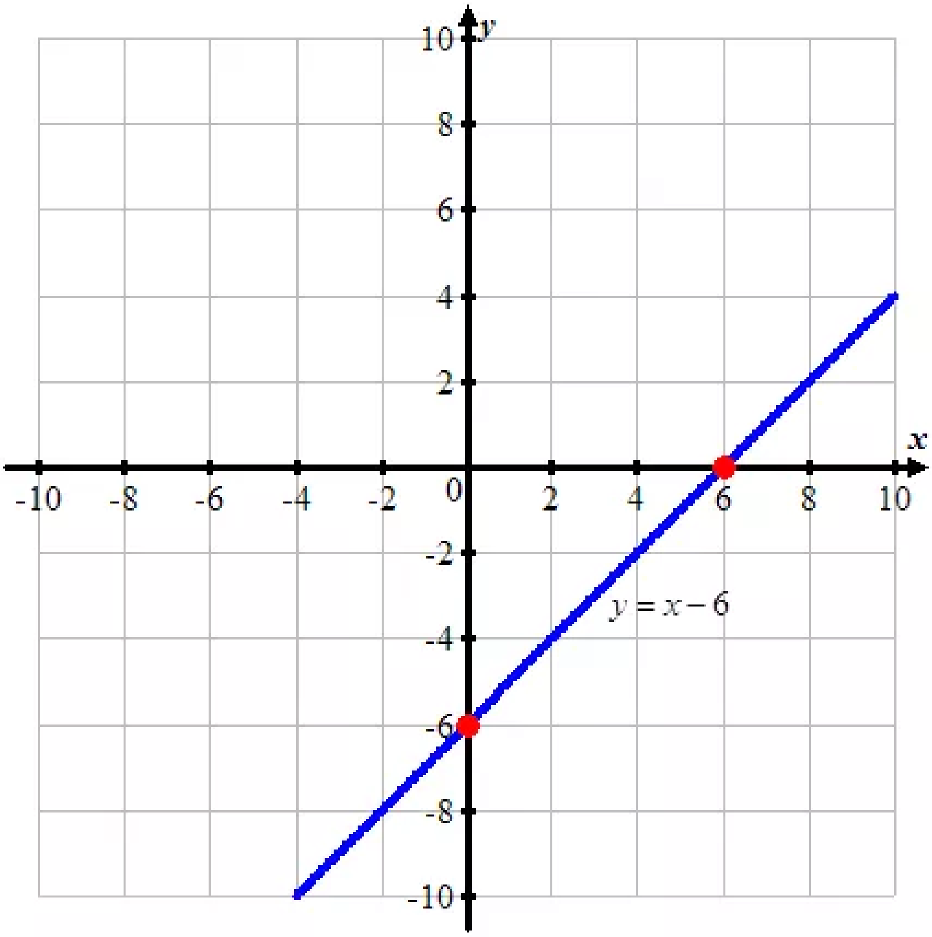
So, the x-intercept is $(6,0)$.

To find y-intercept, substitute $x = 0$ in $y = x - 6$

$y = 0 - 6$	
$y = -6$	Simplify

So, the y-intercept is $(0,-6)$.

Graph the ordered pairs $(6,0),(0,-6)$ and draw a line through the points. Then the graph appears as shown below



Answer 33PA.

Consider the equation:

$$x = 4y - 6$$

To find x-intercept, substitute $y = 0$ in $x = 4y - 6$.

$$x = 4(0) - 6$$

$$x = -6 \quad \text{Simplify}$$

So, the x-intercept is $(-6,0)$.

To find y-intercept, substitute $x = 0$ in $x = 4y - 6$

$$0 = 4y - 6$$

$$-4y = -4y + 4y - 6 \quad \text{Add } -4y \text{ each side}$$

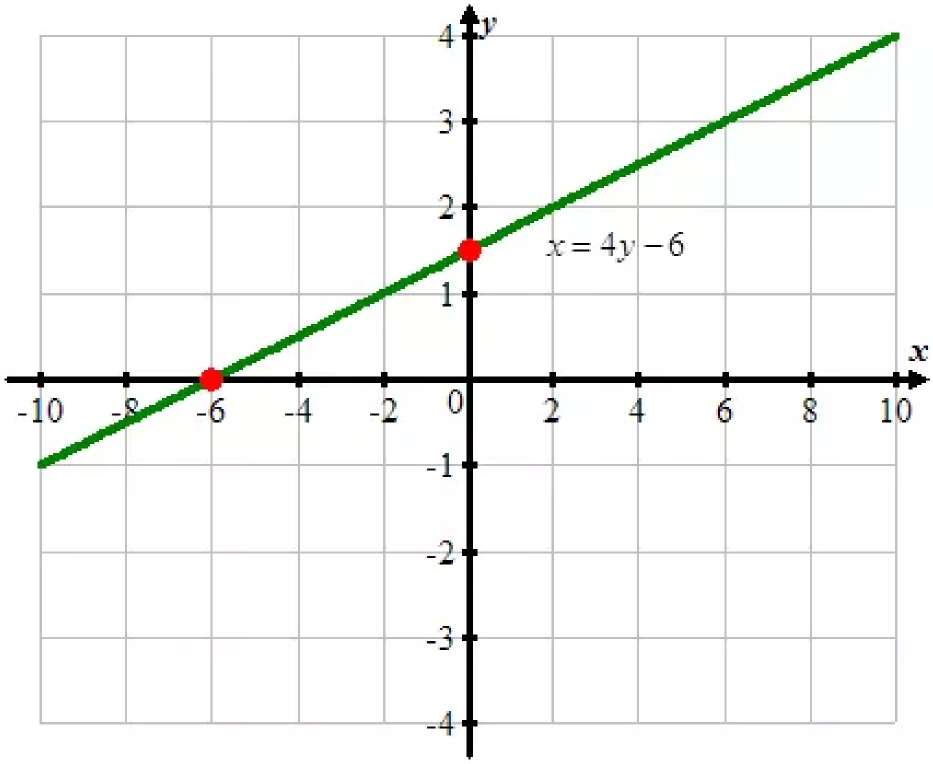
$$-4y = -6 \quad \text{Simplify}$$

$$y = \frac{-6}{-4} \quad \text{Divide each side by } -4$$

$$y = \frac{3}{2} \quad \text{Simplify}$$

So, the y-intercept is $\left(0, \frac{3}{2}\right)$.

Graph the ordered pairs $(-6,0),\left(0,\frac{3}{2}\right)$ and draw a line through the points. Then the graph appears as shown below



Answer 34PA.

Consider the equation:

$$x - y = -3$$

To find x-intercept, substitute $y = 0$ in $x - y = -3$.

$$x - (0) = -3$$

$$x = -3 \quad \text{Simplify}$$

So, the x-intercept is $(-3,0)$.

To find y-intercept, substitute $x = 0$ in $x - y = -3$

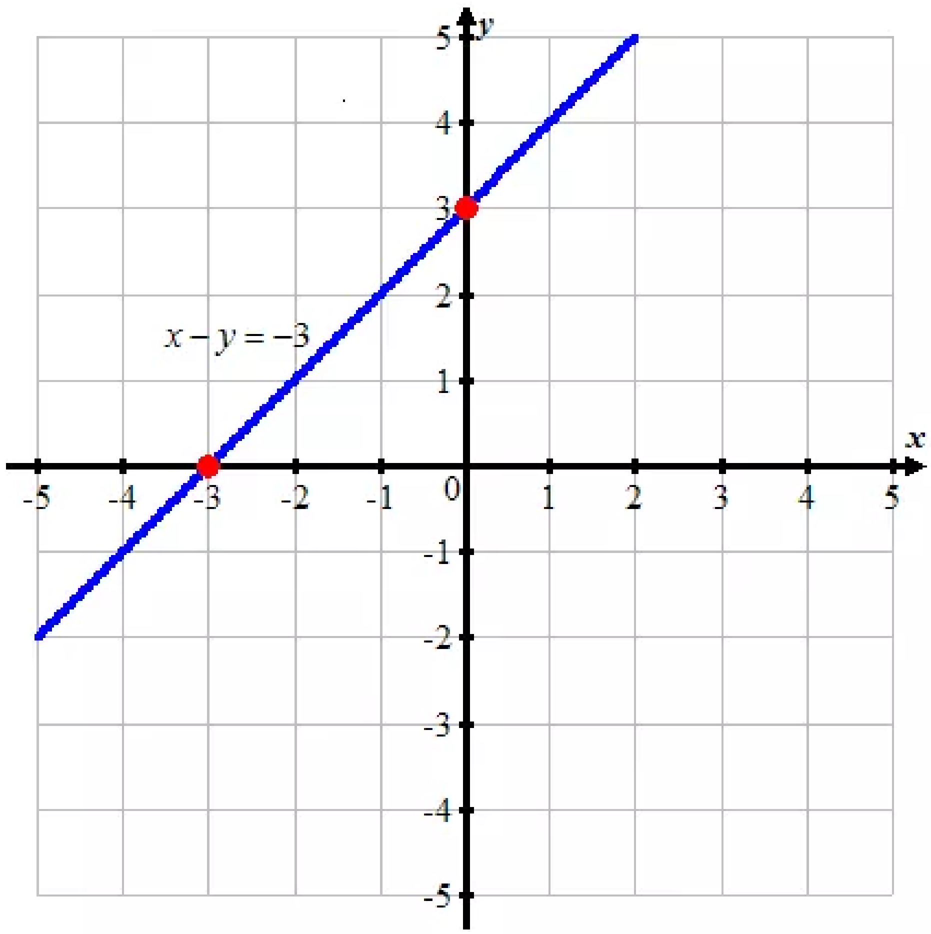
$$0 - y = -3$$

$$-y = -3 \quad \text{Simplify}$$

$$y = 3 \quad \text{Multiply each side by } -1$$

So, the y-intercept is $(0,3)$.

Graph the ordered pairs $(-3,0),(0,3)$ and draw a line through the points. Then the graph appears as shown below



Answer 35PA.

Consider the equation:

$x+3y=9$

To find x-intercept, substitute $y=0$ in $x+3y=9$.

$x+3(0)=9$

$x=9$ Simplify

So, the x-intercept is $(9,0)$.

To find y-intercept, substitute $x=0$ in $x+3y=9$

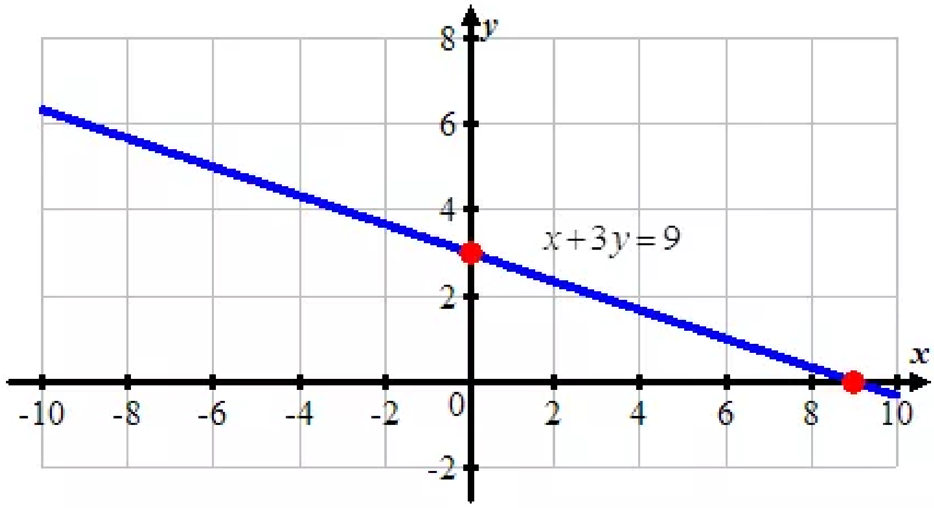
$0+3y=9$

$3y=9$ Simplify

$y=3$ Divide each side by 3

So, the y-intercept is $(0,3)$.

Graph the ordered pairs $(9,0),(0,3)$ and draw a line through the points. Then the graph appears as shown below



Answer 36PA.

Consider the equation:

$$4x+6y=8$$

To find x-intercept, substitute $y=0$ in $4x+6y=8$.

$$4x+6(0)=8$$

$$4x=8 \quad \text{Simplify}$$

$$x=2 \quad \text{Divide each side by 4}$$

So, the x-intercept is $(2,0)$.

To find y-intercept, substitute $x=0$ in $4x+6y=8$

$$4(0)+6y=8$$

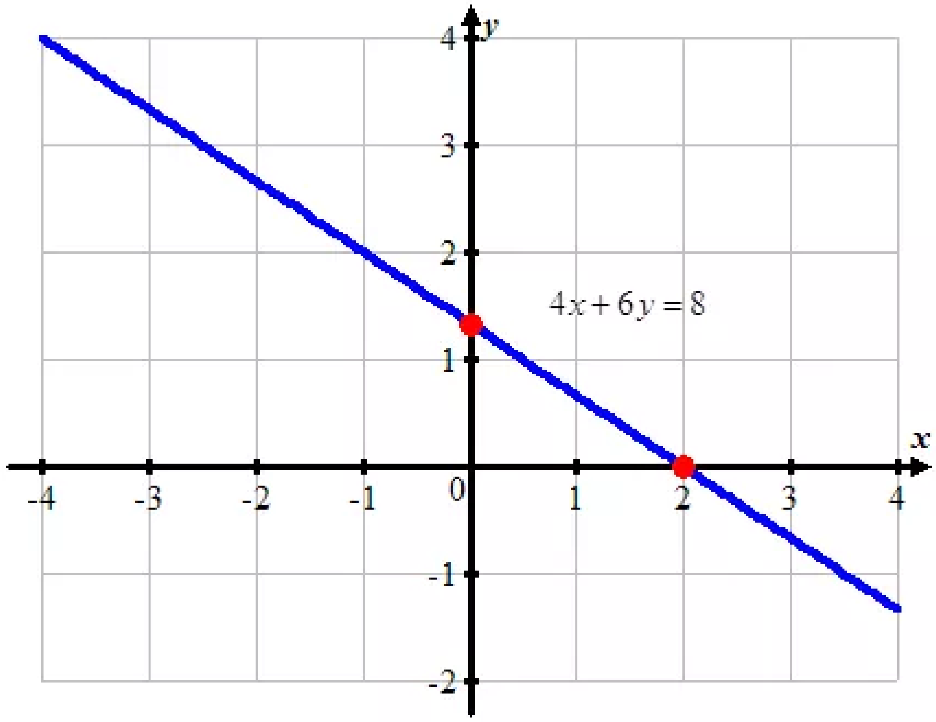
$$6y=8 \quad \text{Simplify}$$

$$y=\frac{8}{6} \quad \text{Divide each side by 6}$$

$$y=\frac{4}{3} \quad \text{Simplify}$$

So, the y-intercept is $\left(0,\frac{4}{3}\right)$.

Graph the ordered pairs $(2,0),\left(0,\frac{4}{3}\right)$ and draw a line through the points. Then the graph appears as shown below



Answer 37PA.

Consider the equation:

$$3x-2y=15$$

To find x-intercept, substitute $y=0$ in $3x-2y=15$.

$$3x-2(0)=15$$

$$3x=15 \quad \text{Simplify}$$

$$x=5 \quad \text{Divide each side by 3}$$

So, the x-intercept is $(5,0)$.

To find y-intercept, substitute $x=0$ in $3x-2y=15$

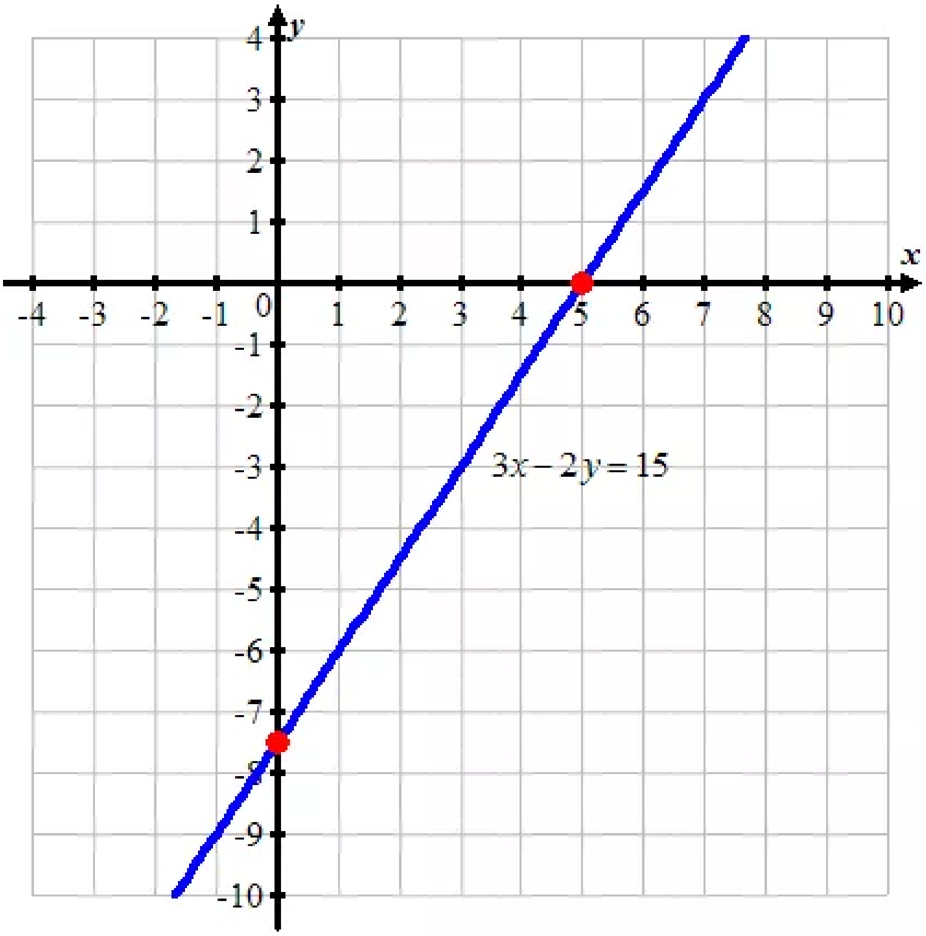
$$3(0)-2y=15$$

$$-2y=15 \quad \text{Simplify}$$

$$y=-\frac{15}{2} \quad \text{Divide each side by } -2$$

So, the y-intercept is $\left(0,-\frac{15}{2}\right)$.

Graph the ordered pairs $(5,0),\left(0,-\frac{15}{2}\right)$ and draw a line through the points. Then the graph appears as shown below



Answer 38PA.

Consider the equation:

$$1.5x + y = 4$$

To find x-intercept, substitute $y = 0$ in $1.5x + y = 4$.

$$1.5x + 0 = 4$$

$$1.5x = 4 \quad \text{Simplify}$$

$$x = \frac{4}{1.5} \quad \text{Divide each side by 1.5}$$

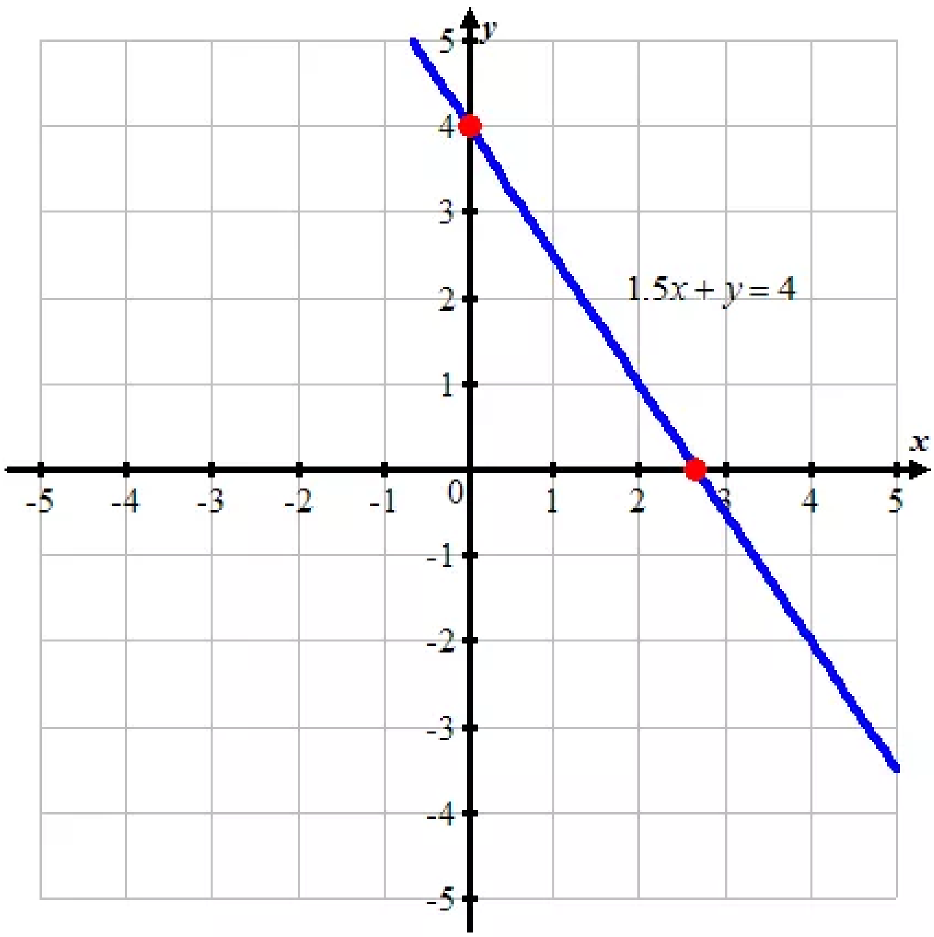
So, the x-intercept is $\left(\frac{4}{1.5}, 0\right)$.

To find y-intercept, substitute $x=0$ in $1.5x+y=4$

$$1.5(0)+y=4$$
$$y=4 \quad \text{Simplify}$$

So, the y-intercept is $(0,4)$.

Graph the ordered pairs $\left(\frac{4}{1.5},0\right),(0,4)$ and draw a line through the points. Then the graph appears as shown below



Answer 39PA.

Consider the equation:

$$2.5x+5y=75$$

To find x-intercept, substitute $y=0$ in $2.5x+5y=75$.

$$2.5x+5(0)=75$$
$$2.5x=75 \quad \text{Simplify}$$
$$x=\frac{75}{2.5} \quad \text{Divide each side by 2.5}$$
$$x=30 \quad \text{Simplify}$$

So, the x-intercept is $(30,0)$.

To find y-intercept, substitute $x=0$ in $2.5x+5y=75$

$2.5(0)+5y=75$

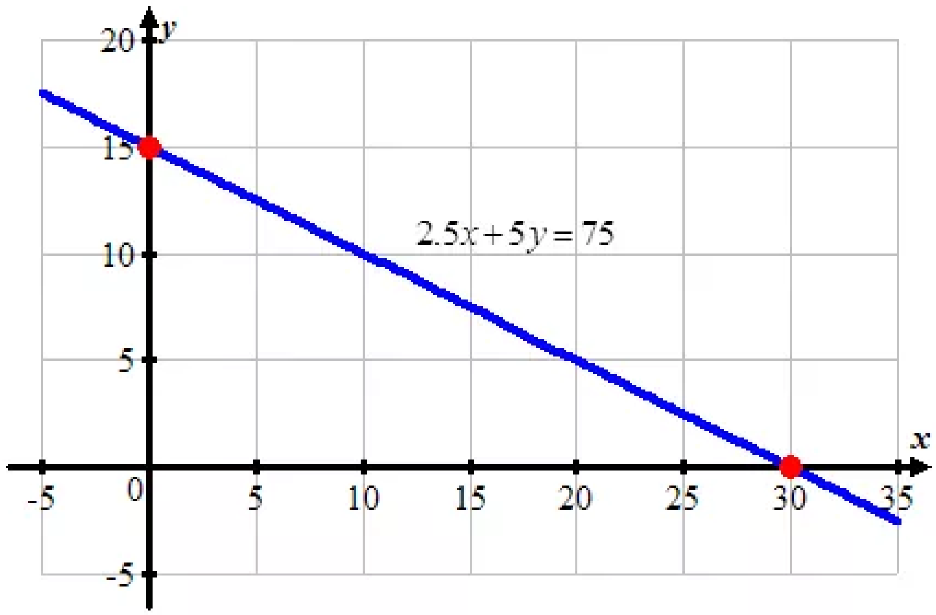
$5y=75$ Simplify

$y=\frac{75}{5}$ Divide each side by 5

$y=15$ Simplify

So, the y-intercept is $(0,15)$.

Graph the ordered pairs $(30,0),(0,15)$ and draw a line through the points. Then the graph appears as shown below



Answer 40PA.

Consider the equation:

$\frac{1}{2}x+y=4$

To find x-intercept, substitute $y=0$ in $\frac{1}{2}x+y=4$.

$\frac{1}{2}x+0=4$

$\frac{1}{2}x=4$ Simplify

$x=8$ Multiply each side by 2

So, the x-intercept is $(8,0)$.

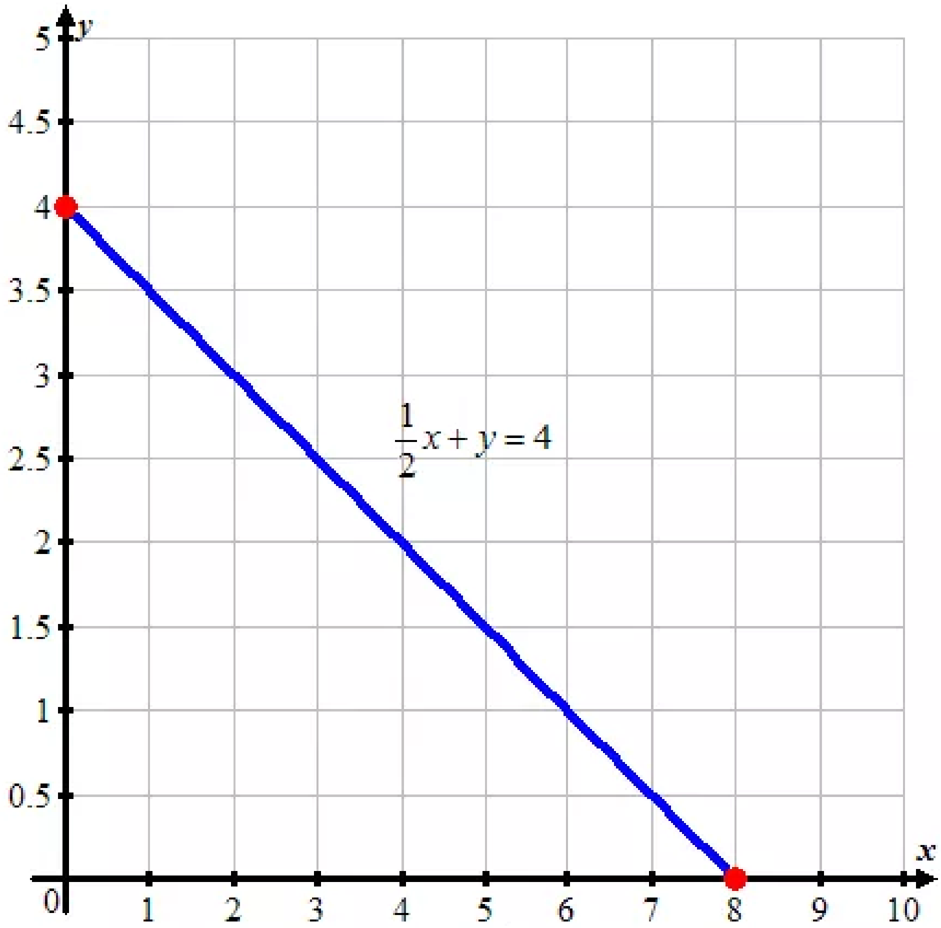
To find y-intercept, substitute $x=0$ in $\frac{1}{2}x+y=4$

$\frac{1}{2}(0)+y=4$

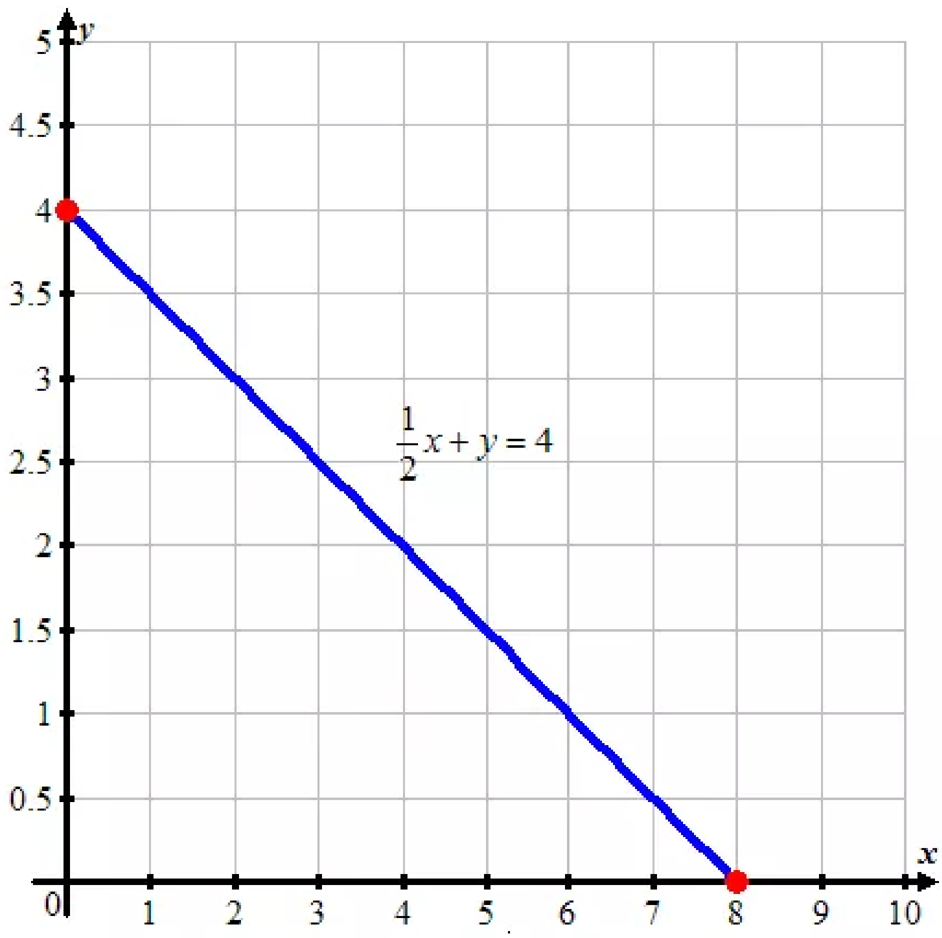
$y=4$ Simplify

So, the y-intercept is $(0,4)$.

Graph the ordered pairs $(8,0),(0,4)$ and draw a line through the points. Then the graph appears as shown below



Graph the ordered pairs $(8,0),(0,4)$ and draw a line through the points. Then the graph appears as shown below



Answer 41PA.

Consider the equation:

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

To find x-intercept, substitute $y=0$ in $x-\frac{2}{3}y=1$.

$$x-\frac{2}{3}(0)=1$$

$$x=1 \qquad \text{Simplify}$$

So, the x-intercept is $(1,0)$.

To find y-intercept, substitute $x=0$ in $x-\frac{2}{3}y=1$

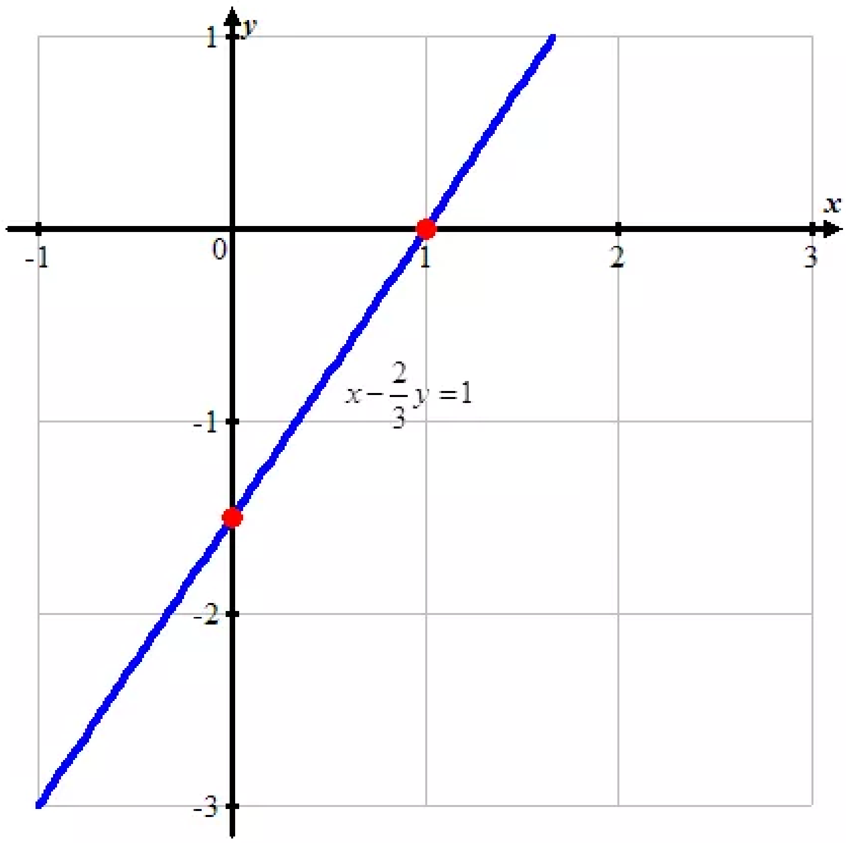
$$0-\frac{2}{3}y=1$$

$$-\frac{2}{3}y=1 \qquad \text{Simplify}$$

$$y=-\frac{3}{2} \qquad \text{Multiply each side by } -\frac{3}{2}$$

So, the y-intercept is $\left(0,-\frac{3}{2}\right)$.

Graph the ordered pairs $(1,0),\left(0,-\frac{3}{2}\right)$ and draw a line through the points. Then the graph appears as shown below



Answer 42PA.

Consider the equation:

$$\frac{4x}{3}=\frac{3y}{4}+1$$

To find x-intercept, substitute $y=0$ in $\frac{4x}{3}=\frac{3y}{4}+1$.

$$\frac{4x}{3}=\frac{3(0)}{4}+1$$

$$\frac{4x}{3}=1 \qquad \text{Simplify}$$

$$x=\frac{3}{4} \qquad \text{Multiply each side by } \frac{3}{4}$$

So, the x-intercept is $\left(\frac{3}{4},0\right)$.

To find y-intercept, substitute $x=0$ in $\frac{4x}{3}=\frac{3y}{4}+1$

$$\frac{4(0)}{3}=\frac{3y}{4}+1$$

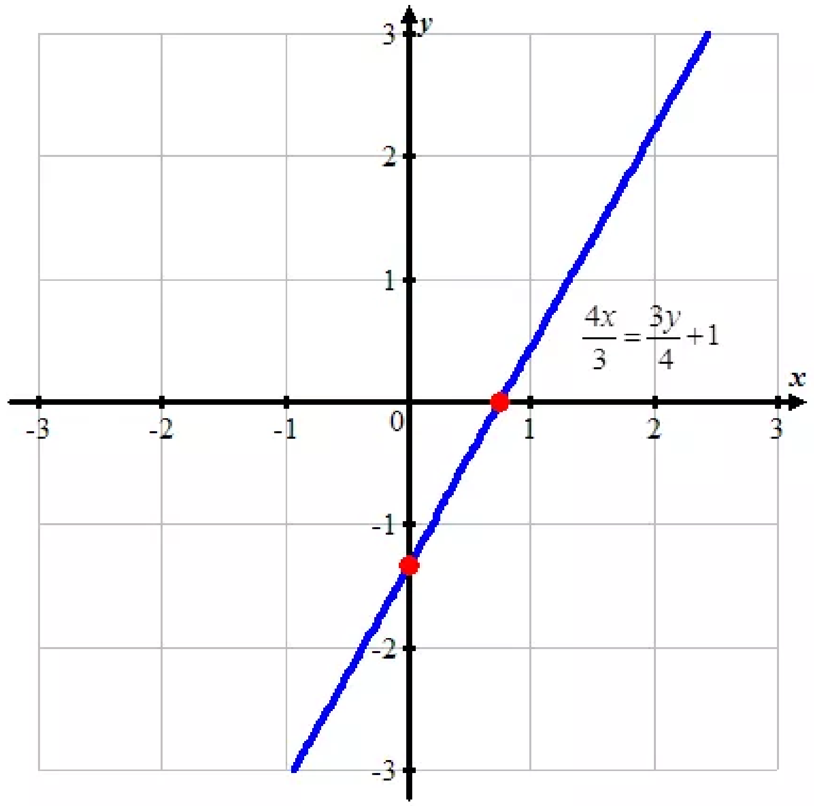
$$0=\frac{3y}{4}+1 \qquad \text{Simplify}$$

$$-1=\frac{3y}{4}+1-1 \qquad \text{Add } -1 \text{ each side}$$

$$-\frac{4}{3}=y \qquad \text{Multiply each side by } -\frac{3}{2}$$

So, the y-intercept is $\left(0,-\frac{4}{3}\right)$.

Graph the ordered pairs $\left(\frac{3}{4},0\right),\left(0,-\frac{4}{3}\right)$ and draw a line through the points. Then the graph appears as shown below



Answer 43PA.

Consider the equation:

$$y+\frac{1}{3}=\frac{1}{4}x-3$$

To find x-intercept, substitute $y=0$ in $y+\frac{1}{3}=\frac{1}{4}x-3$.

$$0+\frac{1}{3}=\frac{1}{4}x-3$$

$$3+\frac{1}{3}=\frac{1}{4}x-3+3 \quad \text{Add 3 each side}$$

$$\frac{10}{3}=\frac{1}{4}x \quad \text{Simplify}$$

$$\frac{40}{3}=x \quad \text{Multiply each side by 4}$$

So, the x-intercept is $\left(\frac{40}{3},0\right)$.

To find y-intercept, substitute $x=0$ in $y+\frac{1}{3}=\frac{1}{4}x-3$

$$y+\frac{1}{3}=\frac{1}{4}(0)-3$$

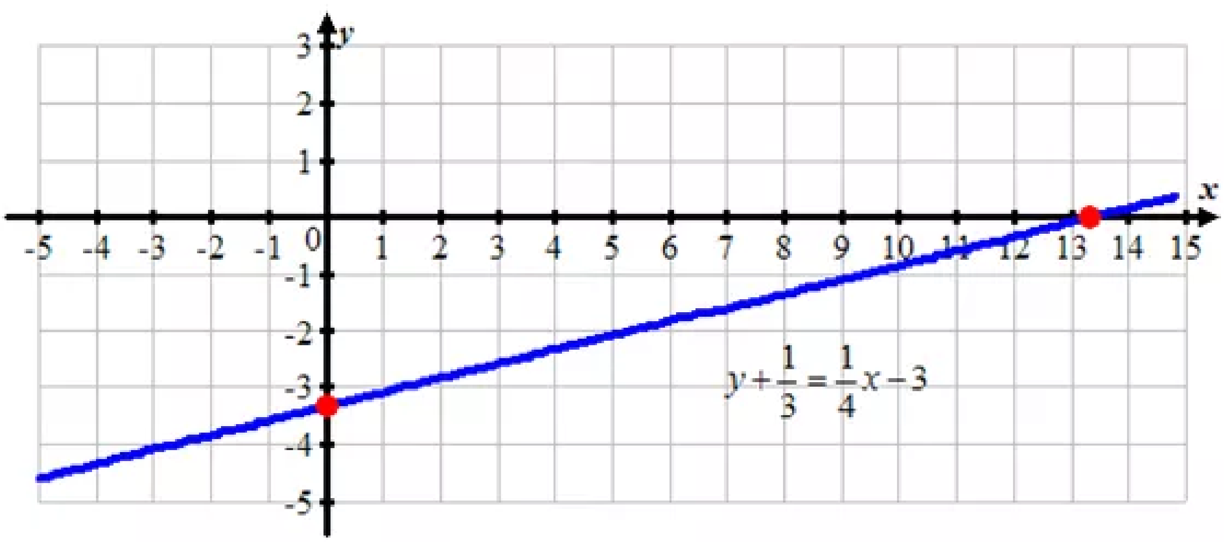
$$y+\frac{1}{3}=-3 \quad \text{Simplify}$$

$$y+\frac{1}{3}-\frac{1}{3}=-3-\frac{1}{3} \quad \text{Add } -\frac{1}{3} \text{ each side}$$

$$y=-\frac{10}{3} \quad \text{Simplify}$$

So, the y-intercept is $\left(0,-\frac{10}{3}\right)$.

Graph the ordered pairs $\left(\frac{40}{3},0\right),\left(0,-\frac{10}{3}\right)$ and draw a line through the points. Then the graph appears as shown below



Answer 44PA.

Consider the equation:

$4x-7y=14$

To find x-intercept, substitute $y=0$ in $4x-7y=14$.

$4x-7(0)=14$

$4x=14$ Simplify

$x=\frac{14}{4}$ Divide each side by 4

$x=\frac{7}{2}$ Simplify

So, the x-intercept is $\boxed{\frac{7}{2}}$ and the graph of the line intersect at $\left(\frac{7}{2},0\right)$.

To find y-intercept, substitute $x=0$ in $4x-7y=14$

$4(0)-7y=14$

$-7y=14$ Simplify

$y=-2$ Divide each side by -7

So, the y-intercept is $\boxed{-2}$ and the graph of the line intersect at $(0,-2)$.

Answer 45PA.

The object is to find an equation in standard form which has 3, 5 as *x*-intercept and *y*-intercept respectably.

If *a* and *b* are the intercepts made by a line on axes, then the equation of the line is

$\frac{x}{a}+\frac{y}{b}=1$

Therefore the equation of line which makes intercepts 3 and 5 on the axes is

$\frac{x}{3}+\frac{y}{5}=1$ Replace *a* and *b* by 3 and 5

To write the equation with integer coefficients, multiply each term by 15.

$\frac{x}{3}+\frac{y}{5}=1$ Original equation

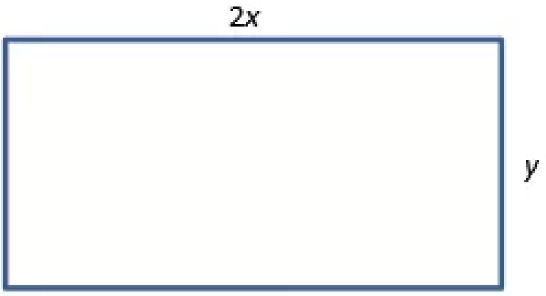
$15\left(\frac{x}{3}\right)+15\left(\frac{y}{5}\right)=15$ Multiply each side of the equation by 15

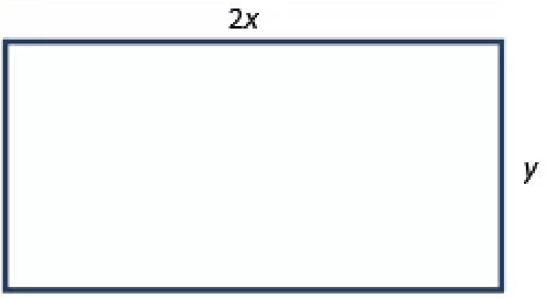
$5x+3y=15$ Simplify

Therefore, the standard form of an equation which makes intercepts 3 and 5 is $\boxed{5x+3y=15}$

Answer 46PA.

Consider the following rectangle





If *l* is the length of the rectangle and *w* is the width, then the perimeter *P* of a rectangle is

$$2l + 2m = P$$

From the above diagram it can be observed that

$$l = 2x, m = y$$

Therefore, the perimeter of the given rectangle is

$$2(2x) + 2y = P$$
$$4x + 2y = P$$

If the perimeter of the rectangle is 30 inches, then

$$4x + 2y = P$$
$$4x + 2y = 30 \qquad \text{Replace } P \text{ by } 30$$

The equation $\boxed{4x + 2y = 30}$ in standard form, where $A = 4, B = 2,$ and $C = 30$.

Answer 47PA.

Consider the following rectangle

If *l* is the length of the rectangle and *w* is the width, then the perimeter *P* of a rectangle is

$$2l + 2m = P$$

From the above diagram it can be observed that

$$l = 2x, m = y$$

Therefore, the perimeter of the given rectangle is

$$2(2x) + 2y = P$$
$$4x + 2y = P$$

If the perimeter of the rectangle is 30 inches, then

$$4x + 2y = P$$
$$4x + 2y = 30 \quad \text{Replace } P \text{ by } 30$$

To find x-intercept, substitute $y = 0$ in $4x + 2y = 30$.

$$4x + 2(0) = 30$$
$$4x = 30 \quad \text{Simplify}$$
$$x = \frac{30}{4} \quad \text{Divide each side by 4}$$
$$x = \frac{15}{2} \quad \text{Simplify}$$

So, the x-intercept is $\frac{15}{2}$.

To find y-intercept, substitute $x = 0$ in $4x + 2y = 30$

$$4(0) + 2y = 30$$
$$2y = 30 \quad \text{Simplify}$$
$$y = \frac{30}{2} \quad \text{Divide each side by 2}$$
$$y = 15 \quad \text{Simplify}$$

So, the y-intercept is 15.

Therefore, the *x* and *y* intercepts of the graph of the equation $4x + 2y = 30$ are $\boxed{\frac{15}{2}}$ and $\boxed{15}$ respectively.

To find y-intercept, substitute $x=0$ in $4x+2y=30$

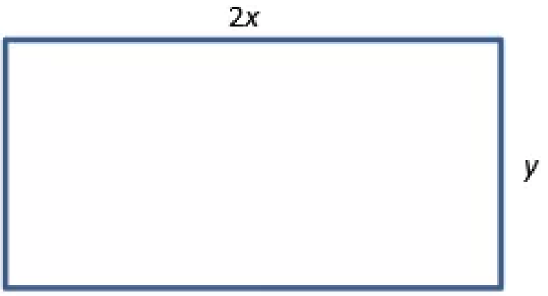
$$\begin{aligned} 4(0)+2y&=30 \\ 2y&=30 && \text{Simplify} \\ y&=\frac{30}{2} && \text{Divide each side by 2} \\ y&=15 && \text{Simplify} \end{aligned}$$

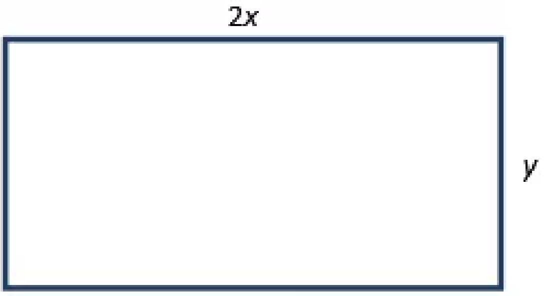
So, the y-intercept is 15.

Therefore, the *x* and *y* intercepts of the graph of the equation $4x+2y=30$ are $\boxed{\frac{15}{2}}$ and $\boxed{15}$ respectively.

Answer 48PA.

Consider the following rectangle





If *l* is the length of the rectangle and *w* is the width, then the perimeter *P* of a rectangle is

$$2l+2m=P$$

From the above diagram it can be observed that

$$l=2x, m=y$$

Therefore, the perimeter of the given rectangle is

$$\begin{aligned} 2(2x)+2y&=P \\ 4x+2y&=P \end{aligned}$$

If the perimeter of the rectangle is 30 inches, then

$$\begin{aligned} 4x+2y&=P \\ 4x+2y&=30 && \text{Replace } P \text{ by } 30 \end{aligned}$$

To find x-intercept, substitute $y=0$ in $4x+2y=30$.

$4x+2(0)=30$

$4x=30$ Simplify

$x=\frac{30}{4}$ Divide each side by 4

$x=\frac{15}{2}$ Simplify

So, the x-intercept is $\frac{15}{2}$ and the graph of the line intersect at $\left(\frac{15}{2},0\right)$.

To find y-intercept, substitute $x=0$ in $4x+2y=30$

$4(0)+2y=30$

$2y=30$ Simplify

$y=\frac{30}{2}$ Divide each side by 2

$y=15$ Simplify

So, the y-intercept is 15 and the graph of the line intersect at $(0,15)$.

Answer 49PA.

Consider the following equation

$d=0.21t$.

where *d* is miles traveled by sound in *t* seconds

Make a table. The values of *t* come from the domain. Substitute each value of *t* into the equation to determine the values of *d* in the range.

t	$d=0.21t$	*d*
1	$d=0.21(1)$ $=0.21$	0.21
2	$d=0.21(2)$ $=0.42$	0.42
3	$d=0.21(3)$ $=0.63$	0.63
4	$d=0.21(4)$ $=0.84$	0.84

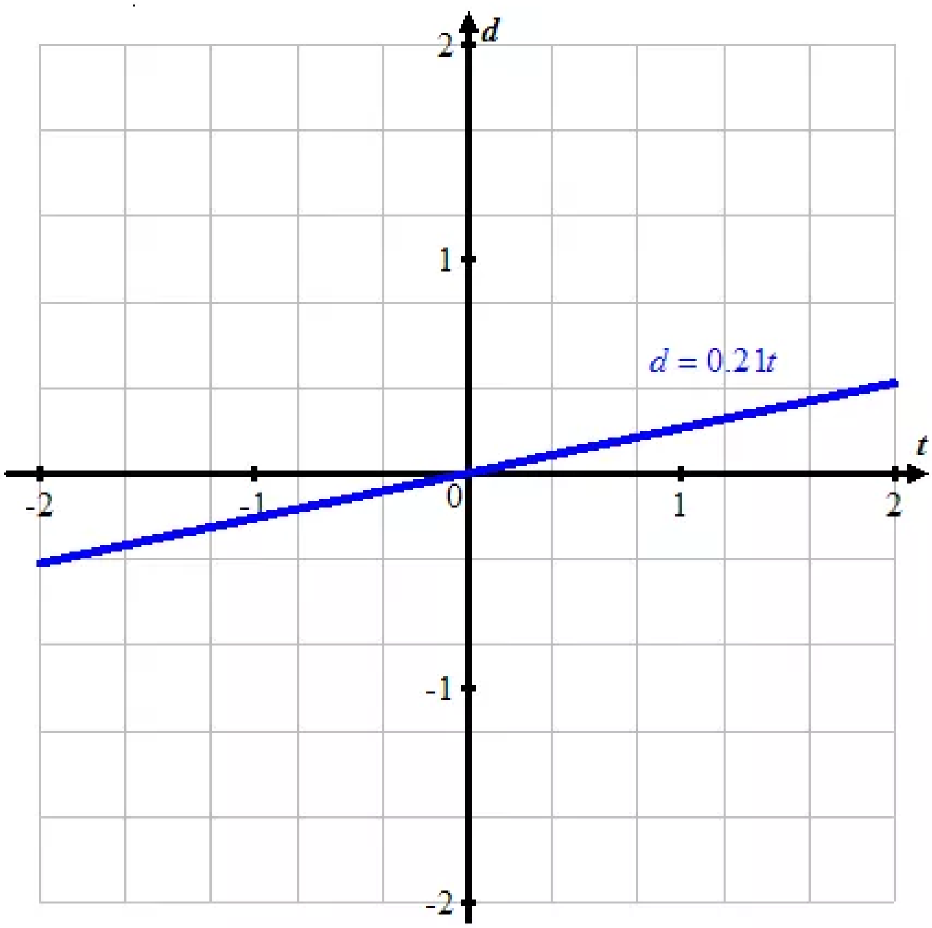
Answer 50PA.

Consider the following equation

$d = 0.21t$,

where *d* is miles traveled by sound in *t* seconds

The graph of the equation is



Answer 51PA.

Consider the following equation

$d = 0.21t$,

where *d* is miles traveled by sound in *t* seconds

Substitute $d = 3$ in $d = 0.21t$

$$3 = 0.21t$$

$$\frac{3}{0.21} = t \qquad \text{Divide each side by 0.21}$$

$$14.29 = t \qquad \text{Simplify}$$

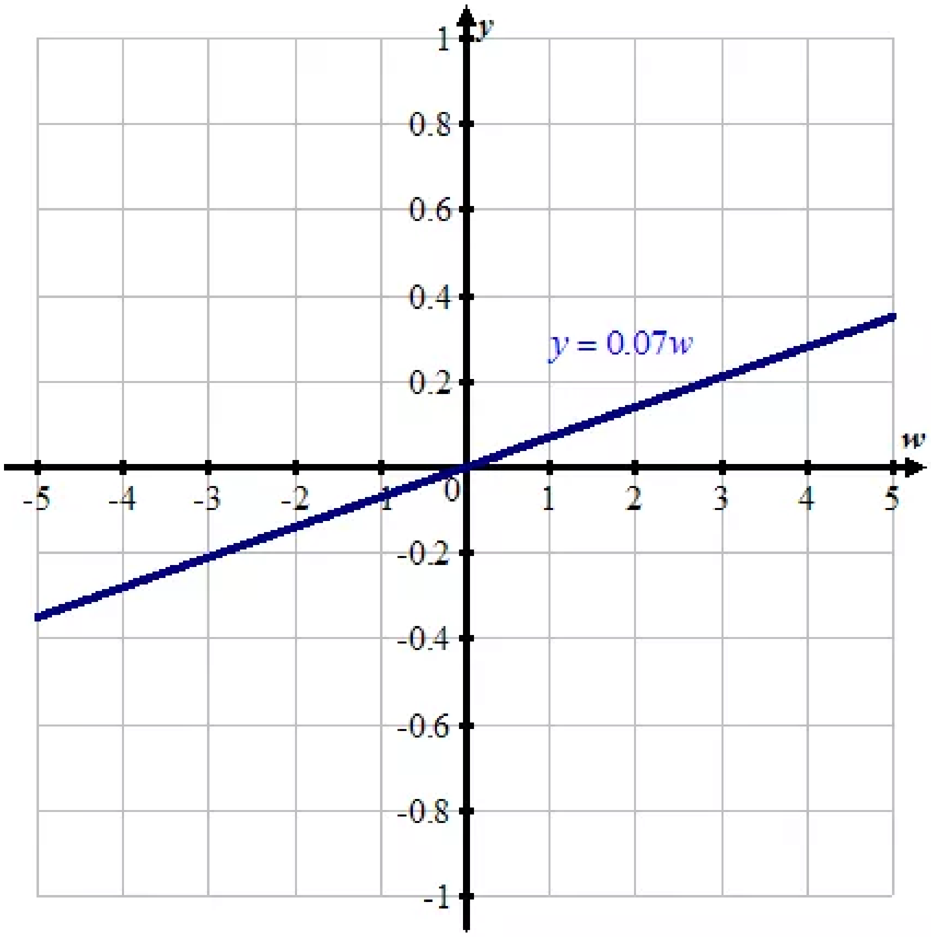
Therefore, it will take $\boxed{14.29 \text{ seconds}}$ to hear the thunder from a storm 3 miles away.

Consider the following equation

$y = 0.07w$,

where y is the number of pints of blood and w is the weight of a person in pounds.

The graph of $y = 0.07w$ is



Answer 53PA.

Consider the following equation

$y = 0.07w$,

where y is the number of pints of blood and w is the weight of a person in pounds

Substitute $y = 12$ in $y = 0.07w$

$$12 = 0.07w$$

$$\frac{12}{0.07} = w \qquad \text{Divide each side by 0.07}$$

$$171.4 = w \qquad \text{Simplify}$$

Therefore, the weight of a person whose body holds 12 pints of blood is about $\boxed{171 \text{ lb}}$

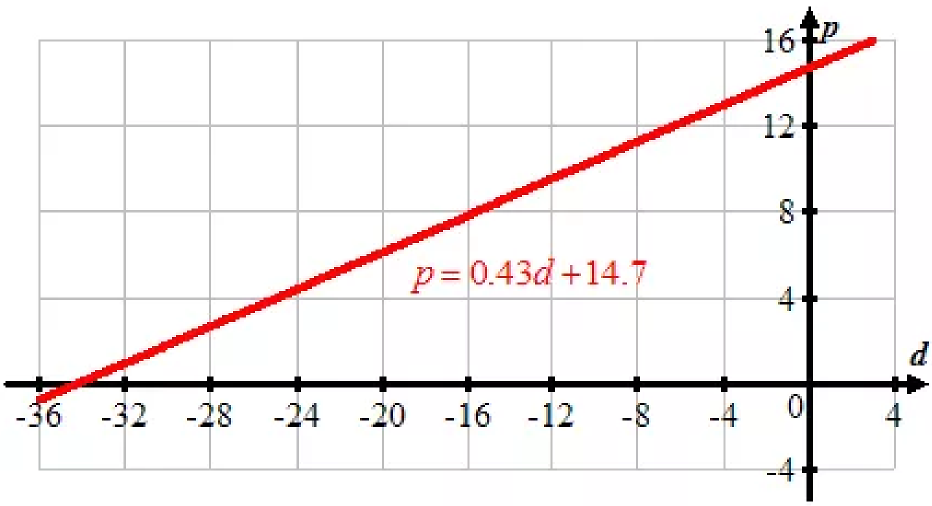
Answer 54PA.

Consider the following equation

$p = 0.43d + 14.7$,

where *p* is the pressure in pounds per square inch and *d* is the depth of the water in feet.

The graph of the equation $p = 0.43d + 14.7$ is



Answer 55PA.

Consider the following equation

$p = 0.43d + 14.7$,

where *p* is the pressure in pounds per square inch and *d* is the depth of the water in feet.

Substitute $d = 400$ in $p = 0.43d + 14.7$

$p = 0.43(400) + 14.7$

$p = 172 + 14.7$ Simplify

$p = 186.7$ Add

Therefore, the pressure at 400 feet depth is $\boxed{186.7 \text{ psi}}$

Answer 56PA.

Consider the following equation

$p = 0.43d + 14.7$,

where *p* is the pressure in pounds per square inch and *d* is the depth of the water in feet.

Substitute $d = 400$ in $p = 0.43d + 14.7$

$p = 0.43(400) + 14.7$

$p = 172 + 14.7$ Simplify

$p = 186.7$ Add

Therefore, the pressure at 400 feet depth is 186.7 psi.

At sea level, *d* will be equal to zero. The pressure at sea level can be obtained by putting *d* is equal to zero.

Substitute $d=0$ in $p=0.43d+14.7$

$p=0.43(0)+14.7$

$p=14.7$ Simplify

$p=14.7$ Add

Therefore, the pressure at sea level is 14.7 psi.

The ratio of pressures at 400 feet depth and at sea level is

$186.7:14.7=12.7:1$

The pressure at 400 feet is $\boxed{12.7}$ times as greater as the pressure at sea level.

Answer 57PA.

Consider the following equation

$f(x,y)=2x-y-8=0$

If

$f(x_1,y_1)=2x_1-y_1-8>0$,

then the point (x_1,y_1) lies below the line $2x-y=8$

Consider a point $(x_1,y_1)=(6,1)$, then

$f(6,1)=2(6)-1-8$

$f(6,1)=12-1-8$

$f(6,1)=3>0$

Therefore, the point $(6,1)$ lies below that line $2x-y=8$.

If

$f(x_1,y_1)=2x_1-y_1-8<0$,

then the point (x_1,y_1) lies above the line $2x-y=8$

Consider a point $(x_1,y_1)=(1,1)$, then

$f(1,1)=2(1)-1-8$

$f(1,1)=2-1-8$

$f(1,1)=-7<0$

Therefore, the point $(x_1,y_1)=(1,1)$ lies above the line $2x-y=8$

If

$f(x_1, y_1) = 2x_1 - y_1 - 8 = 0$,

then the point (x_1, y_1) lies above the line $2x - y = 8$

Consider a point $(x_1, y_1) = (4,0)$, then

$$f(4,0) = 2(4) - 0 - 8$$
$$f(4,0) = 8 - 8$$
$$f(4,0) = 0$$

Therefore, the point $(x_1, y_1) = (4,0)$ lies on the line $2x - y = 8$

Answer 59PA.

Consider the following equation

$$y = 3x - 5$$

Replace *x* by 1 and *y* by -2 in $y = 3x - 5$, then

$-2 = 3(1) - 5$

$-2 = 3 - 5$ Simplify

$-2 = -2$ Correct statement

Therefore, the point $(1,-2)$ lies on the line $y = 3x - 5$.

Hence, the option $\boxed{A}$ is the correct answer.

Replace *x* by 0 and *y* by 5 in $y = 3x - 5$, then

$5 = 3(0) - 5$

$5 = 0 - 5$ Simplify

$5 = -5$ Wrong statement

Since the point $(0,5)$ does not satisfies the line equation $y = 3x - 5$

Therefore, the point $(0,5)$ does not lie on the line $y = 3x - 5$.

Hence, the option $\boxed{B}$ is not the correct answer.

Replace *x* by 1 and *y* by 2 in $y = 3x - 5$, then

$2 = 3(1) - 5$

$2 = 3 - 5$ Simplify

$2 = -2$ Wrong statement

Since the point $(1,2)$ does not satisfies the line equation $y = 3x - 5$

Therefore, the point $(1,2)$ does not lie on the line $y = 3x - 5$.

Hence, the option $\boxed{C}$ is not the correct answer.

Replace *x* by 4 and *y* by 3 in $y = 3x - 5$, then

$$3 = 3(4) - 5$$

$3 = 12 - 5$ Simplify

$3 = 7$ Wrong statement

Since the point $(4,3)$ does not satisfies the line equation $y = 3x - 5$

Therefore, the point $(4,3)$ does not lie on the line $y = 3x - 5$.

Hence, the option $\boxed{D}$ is not the correct answer.

Answer 60PA.

The object is to find the ordered pair which lies on a line passing through the points $(0,1)$ and $(4,3)$.

First find the equation of the line passing through the points $(0,1)$ and $(4,3)$

The equation of the line passing through the points (x_1, y_1) and (x_2, y_2) is

$$y - y_1 = \frac{y_2 - y_1}{x_2 - x_1}(x - x_1)$$

The equation of line through the points $(0,1)$ and $(4,3)$ is

$$y - 1 = \frac{3-1}{4-0}(x - 0)$$

$$y - 1 = \frac{2}{4}x$$

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

$$y = \frac{x}{2} + 1$$

Consider the following equation

$$y = \frac{x}{2} + 1$$

Replace *x* by 1 and *y* by 1 in $y = \frac{x}{2} + 1$, then

$$1 = \frac{1}{2} + 1$$

$1 = \frac{3}{2}$ Wrong statement

Since the point $(1,1)$ does not satisfies the line equation

Therefore, the point $(1,1)$ lies on the line $y = \frac{x}{2} + 1$.

Hence, the option *A* is not the correct answer.

Replace *x* by 2 and *y* by 2 in $y=\frac{x}{2}+1$, then

$$2=\frac{2}{2}+1$$

$2=1+1$ Simplify

$2=2$ Correct statement

Therefore, the point $(2,2)$ lies on the line $y=\frac{x}{2}+1$.

Hence, the option $\boxed{B}$ is the correct answer.

Replace *x* by 3 and *y* by 3 in $y=\frac{x}{2}+1$, then

$$3=\frac{3}{2}+1$$

$3=\frac{5}{2}$ Wrong statement

Since the point $(3,3)$ does not satisfies the line equation

Therefore, the point $(3,3)$ lies on the line $y=\frac{x}{2}+1$.

Hence, the option *C* is not the correct answer.

Replace *x* by 4 and *y* by 4 in $y=\frac{x}{2}+1$, then

$$4=\frac{4}{2}+1$$

$4=3$ Wrong statement

Since the point $(4,4)$ does not satisfies the line equation

Therefore, the point $(4,4)$ lies on the line $y=\frac{x}{2}+1$.

Hence, the option *D* is not the correct answer.

Answer 61MYS.

Consider an equation

$y = x - 5$

The object is to solve the equation if the domain is $\{-3, -1, 2, 5, 8\}$ and graphing the solution set.

Make a table. The values of *x* come from the domain. Substitute each value of *x* into the equation to determine the corresponding values of *y* in the range.

x	$y = x - 5$	y	(x, y)
-3	$y = -3 - 5$ $= -8$	-8	$(-3, -8)$
-1	$y = -1 - 5$ $= -6$	-6	$(-1, -6)$
2	$y = 2 - 5$ $= -3$	-3	$(2, -3)$
5	$y = 5 - 5$ $= 0$	0	$(5, 0)$
8	$y = 8 - 5$ $= 3$	3	$(8, 3)$

Therefore the solution set is $\boxed{\{(-3, -8), (-1, -6), (2, -3), (5, 0), (8, 3)\}}$.

Answer 62MYS.

Consider an equation

$$y = 2x + 1$$

The object is to solve the equation if the domain is $\{-3, -1, 2, 5, 8\}$ and graphing the solution set.

Make a table. The values of *x* come from the domain. Substitute each value of *x* into the equation to determine the corresponding values of *y* in the range.

x	$y = 2x + 1$	y	(x, y)
-3	$y = 2(-3) + 1$ $= -5$	-5	$(-3, -5)$
-1	$y = 2(-1) + 1$ $= -1$	-1	$(-1, -1)$
2	$y = 2(2) + 1$ $= 5$	5	$(2, 5)$
5	$y = 2(5) + 1$ $= 11$	11	$(5, 11)$
8	$y = 2(8) + 1$ $= 17$	17	$(8, 17)$

Therefore the solution set is $\boxed{\{(-3,-5),(-1,-1),(2,5),(5,11),(8,17)\}}$.

Answer 63MYS.

Consider an equation

$$3x + y = 12$$

The object is to solve the equation if the domain is $\{-3, -1, 2, 5, 8\}$ and graphing the solution set.

First solve the equation in terms of *y*.

$$\begin{aligned} 3x + y &= 12 \\ -3x + 3x + y &= 12 - 3x && \text{Subtract } 3x \text{ from both sides} \\ y &= 12 - 3x && \text{Simplify} \end{aligned}$$

Make a table. The values of *x* come from the domain. Substitute each value of *x* into the equation to determine the corresponding values of *y* in the range.

x	$y=12-3x$	y	(x,y)
-3	$y=12-3(-3)$ $=21$	21	$(-3,21)$
-1	$y=12-3(-1)$ $=15$	15	$(-1,15)$
2	$y=12-3(2)$ $=6$	6	$(2,6)$
5	$y=12-3(5)$ $=-3$	-3	$(5,-3)$
8	$y=12-3(8)$ $=-12$	-12	$(8,-12)$

Therefore the solution set is $\boxed{\{(-3,21),(-1,15),(2,6),(5,-3),(8,-12)\}}$.

Answer 64MYS.

Consider an equation

$3x+y=12$

The object is to solve the equation if the domain is $\{-3,-1,2,5,8\}$ and graphing the solution set.

First solve the equation in terms of *y*.

$$\begin{aligned} 3x+y&=12 \\ -3x+3x+y&=12-3x && \text{Subtract } 3x \text{ from both sides} \\ y&=12-3x && \text{Simplify} \end{aligned}$$

Answer 65MYS.

Consider an equation

$$3x-\frac{1}{2}y=6$$

The object is to solve the equation if the domain is $\{-3,-1,2,5,8\}$ and graphing the solution set.

First solve the equation in terms of *y*.

$$3x-\frac{1}{2}y=6$$

$$-3x+3x-\frac{1}{2}y=6-3x \quad \text{Subtract } 3x \text{ from both sides}$$

$$-\frac{1}{2}y=6-3x \quad \text{Simplify}$$

$$y=6x-12 \quad \text{Multiply each side by } -2$$

Make a table. The values of *x* come from the domain. Substitute each value of *x* into the equation to determine the corresponding values of *y* in the range.

x	$y=6x-12$	y	(x,y)
-3	$y=6(-3)-12$ $=-30$	-30	$(-3,-30)$
-1	$y=6(-1)-12$ $=-18$	-18	$(1,-18)$
2	$y=6(2)-12$ $=0$	0	$(2,0)$
5	$y=6(5)-12$ $=18$	18	$(5,18)$
8	$y=6(8)-12$ $=36$	36	$(8,36)$

Therefore the solution set is $\boxed{\{(-3,-30),(-1,-18),(2,0),(5,18),(8,36)\}}$.

Answer 66MYS.

Consider an equation

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

The object is to solve the equation if the domain is $\{-3,-1,2,5,8\}$ and graphing the solution set.

First solve the equation in terms of *y*.

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

$$2x-2x+\frac{1}{3}y=4+2x \quad \text{Add } 2x \text{ to both sides}$$

$$\frac{1}{3}y=4+2x \quad \text{Simplify}$$

$$y=12+6x \quad \text{Multiply each side by 3}$$

Make a table. The values of *x* come from the domain. Substitute each value of *x* into the equation to determine the corresponding values of *y* in the range.

x	$y=12+6x$	y	(x,y)
-3	$y=12+6(-3)$ $=-6$	-6	$(-3,-6)$
-1	$y=12+6(-1)$ $=6$	6	$(-1,6)$
2	$y=12+6(2)$ $=22$	22	$(2,22)$
5	$y=12+6(5)$ $=42$	42	$(5,42)$
8	$y=12+6(8)$ $=60$	60	$(8,60)$

Therefore the solution set is $\boxed{\{(-3,-6),(-1,6),(2,22),(5,42),(8,60)\}}$.

Answer 67MYS.

Consider a relation

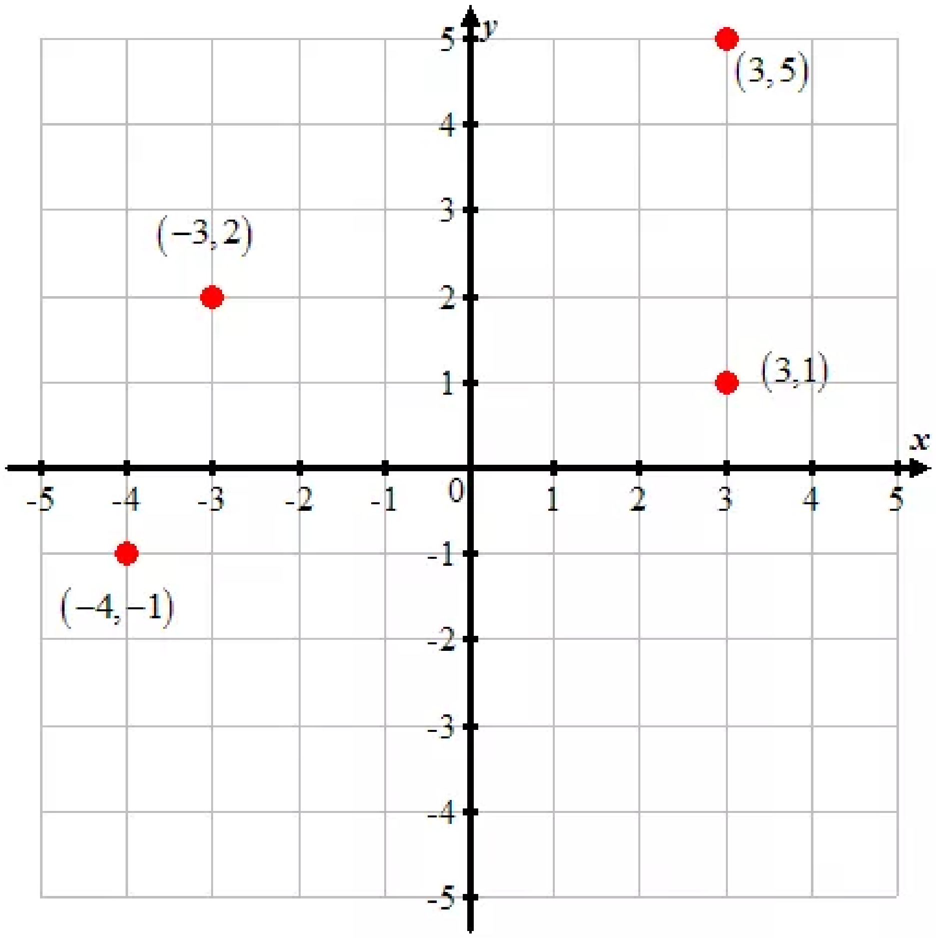
$$\{(3,5),(-4,-1),(-3,2),(3,1)\}$$

The object is to table the above relation, graphing the relation, and drawing a mapping of the relation.

First, form a table of the given relation by listing the set of *x*-coordinates in the first column of the table and *y*-coordinates in the second column of the table.

x	*y*
3	5
-4	-1
-2	2
3	1

Graphing each ordered pair in coordinate plane



Map the relation $\{(3,5),(-4,-1),(-3,2),(3,1)\}$ by listing *x* and *y* values and connecting them by arrows.

The domain of the relation is $\{3,-4,-3\}$ and the range is $\{5,-1,2,1\}$.

Answer 68MYS.

Consider a relation

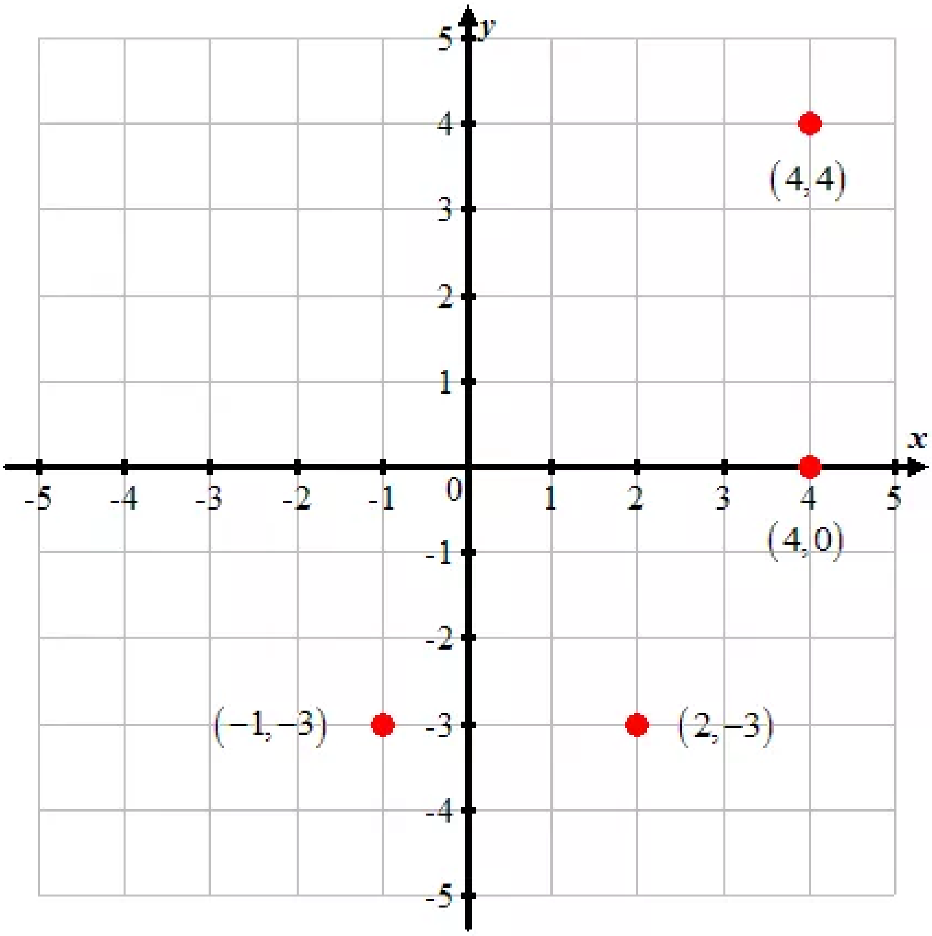
$\{(4,0),(2,-3),(-1,-3),(4,4)\}$

The object is to table the above relation, graphing the relation, and drawing a mapping of the relation.

First, form a table of the given relation by listing the set of *x*-coordinates in the first column of the table and *y*-coordinates in the second column of the table.

x	*y*
4	0
2	-3
-1	-3
4	4

Graphing each ordered pair in coordinate plane



Map the relation $\{(4,0),(2,-3),(-1,-3),(4,4)\}$ by listing *x* and *y* values and connecting them by arrows.

The domain of the relation is $\{4,2,-1\}$ and the range is $\{0,-3,4\}$.

Answer 69MYS.

Consider a relation

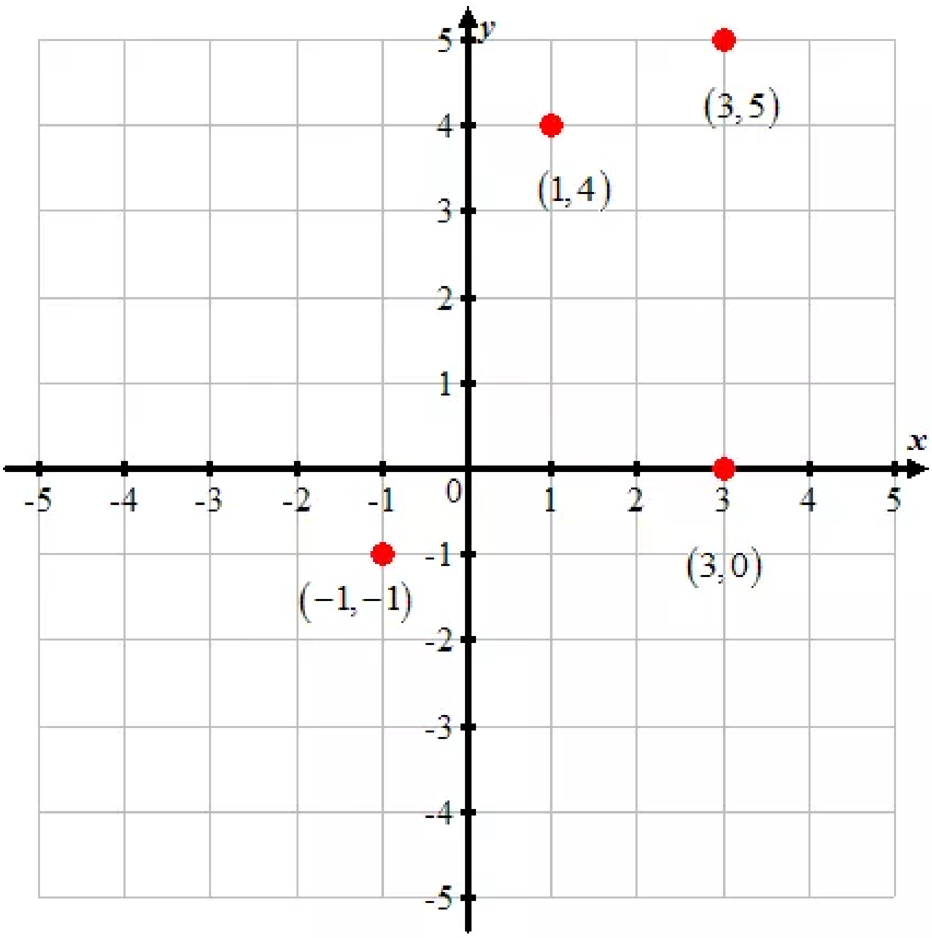
$$\{(1,4),(3,0),(-1,-1),(3,5)\}$$

The object is to table the above relation, graphing the relation, and drawing a mapping of the relation.

First, form a table of the given relation by listing the set of *x*-coordinates in the first column of the table and *y*-coordinates in the second column of the table.

x	y
1	4
3	0
-1	-1
3	5

Graphing each ordered pair in coordinate plane



Map the relation $\{(1,4),(3,0),(-1,-1),(3,5)\}$ by listing x and y values and connecting them by arrows.

The domain of the relation is $\{1,3,-1\}$ and the range is $\{4,0,-1,5\}$.

Answer 70MYS.

Consider a relation

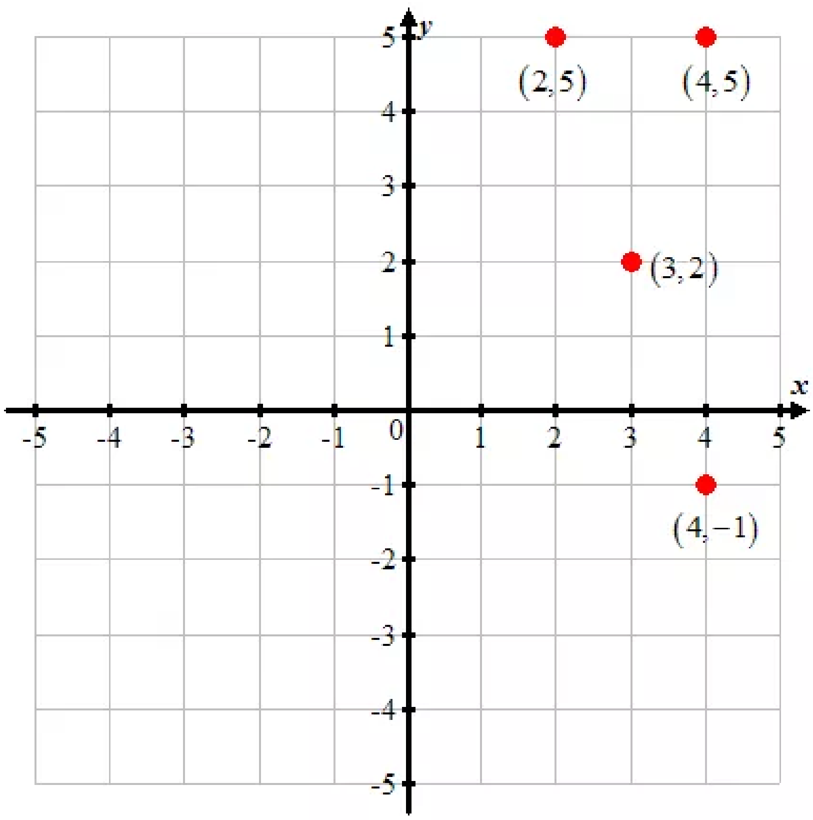
$\{(4,5),(2,5),(4,-1),(3,2)\}$

The object is to table the above relation, graphing the relation, and drawing a mapping of the relation.

First, form a table of the given relation by listing the set of x-coordinates in the first column of the table and y-coordinates in the second column of the table.

x	y
4	5
2	5
4	-1
3	2

Graphing each ordered pair in coordinate plane



Map the relation $\{(4,5),(2,5),(4,-1),(3,2)\}$ by listing *x* and *y* values and connecting them by arrows.

The domain of the relation is $\{4,2,3\}$ and the range is $\{5,-1,2\}$.

Answer 71MYS.

Consider the equation:

$2(x-2)=3x-(4x-5).$

The objective is to solve the equation for $x.$

Use the properties of equality and inverse operations to solve the equation.

$2x-4=3x-4x+5$	Distributive property
$2x-4=-x+5$	Perform the operation for like terms
$2x-4+4=-x+5+4$	Add 4 to both sides of the equation
$2x=-x+9$	Perform the operation for like terms
$2x+x=-x+x+9$	Add x to both sides of the equation
$3x=9$	Perform the operation for like terms
$\frac{3x}{3}=\frac{9}{3}$	Divide both sides of the equation by 3
$x=3$	Perform the division

The solution of $2(x-2)=3x-(4x-5).$ is $x=3.$

Check:

Check the solution by substituting it into the original equation.

Substitute $x=3.$ in the equation $2(x-2)=3x-(4x-5).$

$2(3-2)\stackrel{?}{=}3(3)-(4(3)-5)$	Replace x with 3
$2\stackrel{?}{=}9-7$	Simplify
$2=2$	True

Thus, the solution of $2(x-2)=3x-(4x-5)$ is $\boxed{x=3}$

Answer 72MYS.

Consider the equation:

$$3a+8=2a-4$$

The objective is to solve the equation for a.

Use the properties of equality and inverse operations to solve the equation.

$3a+8-2a=2a-4-2a$	Add $-2a$ to both sides of the equation
$a+8=-4$	Perform the operation for like terms
$a+8-8=-4-8$	Add -8 to both sides of the equation
$a=-12$	Perform the operation for like terms

The solution of $3a+8=2a-4$ is $a=-12$

Check:

Check the solution by substituting it into the original equation.

Substitute $a=-12$ in the equation $3a+8=2a-4$

$3(-12)+8\overset{?}{=}2(-12)-4$	Replace a with -12
$-36+8\overset{?}{=}-24-4$	Simplify
$-28=-28$	**True**

Thus, the solution of $3a+8=2a-4$ is $\boxed{a=-12}$.

Answer 73MYS.

Consider the equation:

$$3n-12=5n-20$$

The objective is to solve the equation for n

Use the properties of equality and inverse operations to solve the equation.

$3n-12-5n=5n-20-5n$	Add $-5n$ to both sides of the equation
$-12-2n=-20$	Perform the operation for like terms
$-12-2n+12=-20+12$	Add 12 to both sides of the equation
$-2n=-8$	Perform the operation for like terms
$\frac{-2n}{-2}=\frac{-8}{-2}$	Divide bot
$n=4$	Perform th

The solution of $3n-12=5n-20$ is n

Check:

Check the solution by substituting it into the original equation.

Substitute $n=4$ in the equation $3n-12=5n-20$

$3(4)-12\overset{?}{=}5(4)-20$	Replace n with 4
$12-12\overset{?}{=}20-20$	Simplify
$0=0$	**True**

Thus, the solution of $3n-12=5n-20$ is $\boxed{n=4}$.

Answer 74MYS.

Consider the equation:

$6(x+3)=3x$

The objective is to solve the equation for x

Use the properties of equality and inverse operations to solve the equation.

$6x+18=3x$	Distributive property
$6x+18-18=3x-18$	Add -18 to both sides of the equation
$6x=3x-18$	Perform the operation for like terms
$6x-3x=3x-3x-18$	Add $-3x$ to both sides of the equation
$3x=-18$	Perform the operation for like terms
$\frac{3x}{3}=\frac{-18}{3}$	Divide both sides of the equation by 3
$x=-6$	Perform the division

The solution of $6(x+3)=3x$ is $x=-6$

Check:

Check the solution by substituting it into the original equation.

Substitute $x=-6$ in the equation $6(x+3)=3x$

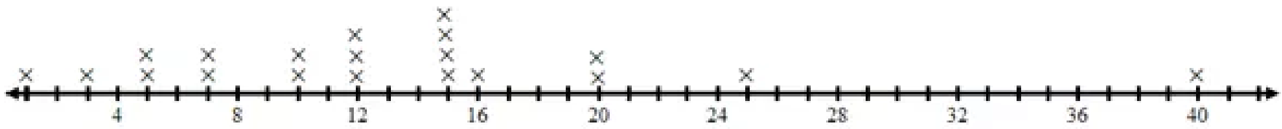
$6(-6+3)\stackrel{?}{=}3(-6)$	Replace x with -6
$6(-3)\stackrel{?}{=}-18$	Simplify
$-18=-18$	**True**

Thus, the solution of $6(x+3)=3x$ is $\boxed{x=-6}$.

Answer 75MYS.

Opossum	1
Pig	10
Rabbit	5
Sea Lion	12
Sheep	12
Squirrel	10
Wolf	5
Zebra	15

The line plot of the average life spans of the animals in the table is given below

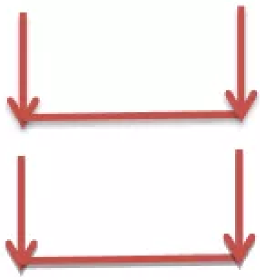


Answer 76MYS.

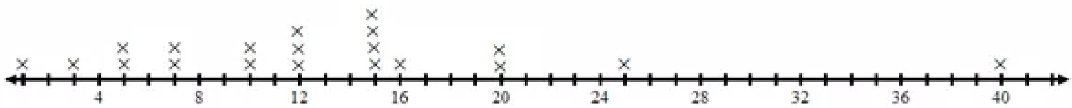
Consider the table of average life spans of 20 different animals:

Animal	Life Span (years)
Baboon	20
Cow	15
Elephant	40
Fox	7
Gorilla	20
Hippopotamus	25
Kangaroo	7
Lion	15
Monkey	15
Mouse	3
Opossum	1
Pig	10
Rabbit	5

Sea Lion	12
Sheep	12
Squirrel	10
Wolf	5
Zebra	15



The line plot of the average life spans of the animals in the table is given below



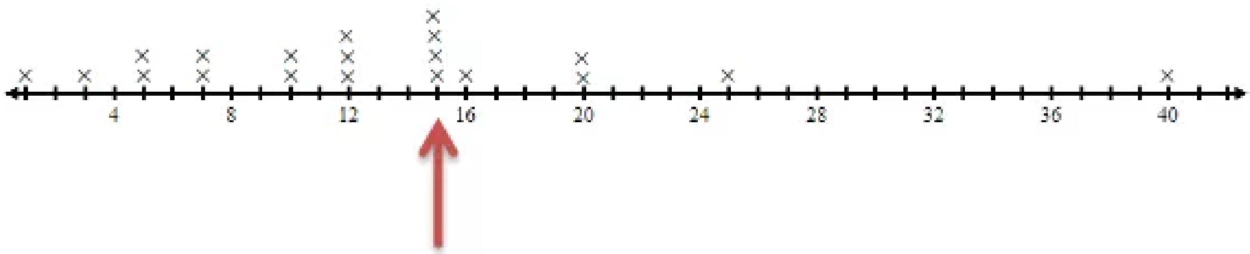
Counting the ticks from 7 to 16 in the above line, it can be observed that there are 12 animals' lives between 7 and 16 years.

Answer 77MYS.

Consider the table of average life spans of 20 different animals:

Animal	Life Span (years)
Baboon	20
Camel	12
Cow	15
Elephant	40
Fox	7
Gorilla	20
Hippopotamus	25
Kangaroo	7
Lion	15
Monkey	15
Mouse	3
Opossum	1
Pig	10
Rabbit	5
Sea Lion	12
Sheep	12
Squirrel	10
Wolf	5
Zebra	15

The line plot of the average life spans of the animals in the table is given below



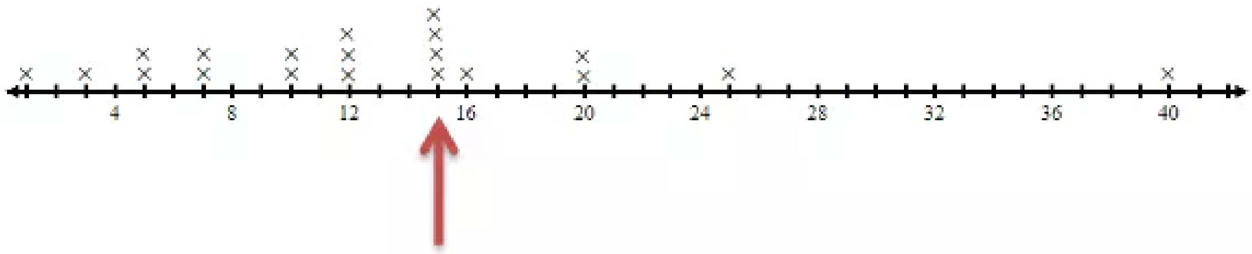
Counting the ticks at 15 in the above line, it can be observed that the number 15 occurs most frequently.

Answer 78MYS.

Consider the table of average life spans of 20 different animals:

Animal	Life Span (years)
Baboon	20
Camel	12
Cow	15
Elephant	40
Fox	7
Gorilla	20
Hippopotamus	25
Kangaroo	7
Lion	15
Monkey	15
Mouse	3
Opossum	1
Pig	10
Rabbit	5
Sea Lion	12
Sheep	12
Squirrel	10
Wolf	5
Zebra	15

The line plot of the average life spans of the animals in the table is given below



Counting the ticks at 15 in the above line, it can be observed that the number $\boxed{15}$ occurs most frequently.

Answer 79MYS.

Consider the expression

$$19+5\cdot 4$$

The objective is to find the given sum.

First, multiply 5 and 4

$$19+5\cdot 4=19+20$$

Now, adding 19 and 20

$$\begin{aligned}19+5\cdot 4&=19+20\\&=39\end{aligned}$$

Therefore, $19+5\cdot 4=\boxed{39}$.

Answer 80MYS.

Consider the expression

$$(25-4)\div(2^2-1^3)$$

The objective is to find the given sum.

First, evaluate the powers

$$(25-4)\div(2^2-1^3)=(25-4)\div(4-1)$$

Subtract 4 from 25 and 1 from 4

$$\begin{aligned}(25-4)\div(2^2-1^3)&=(25-4)\div(4-1)\\&=21\div 3\end{aligned}$$

Dividing 21 by 3

$$(25-4)\div(2^2-1^3)=\boxed{7}.$$

Answer 81MYS.

Consider the expression

$12 \div 4 + 15 \cdot 3$

The objective is to find the given sum.

$12 \div 4 + 15 \cdot 3 = 3 + 15 \cdot 3$ Dividing 12 by 4

$= 3 + 45$ Multiply 15 by 3

$= 48$ Add 3 and 45

Therefore,

$12 \div 4 + 15 \cdot 3 = \boxed{48}$

Answer 82MYS.

Consider the expression

$12(19 - 15) - 3 \cdot 8$

The objective is to find the given sum.

$12(19 - 15) - 3 \cdot 8 = 12(4) - 3 \cdot 8$ Evaluate the inside grouping symbols

$= 48 - 24$ Multiply 12 by 4 and 3 by 8

$= 24$ Subtract 24 from 48

Therefore,

$12(19 - 15) - 3 \cdot 8 = \boxed{24}$

Answer 83MYS.

Consider the expression

$6(4^3 + 2^2)$

The objective is to find the given sum.

$6(4^3 + 2^2) = 6(64 + 4)$ Evaluate the inside grouping symbols

$= 6(68)$ Multiply 64 and 4

$= 408$ Multiply 6 and 68

Therefore,

$6(4^3 + 2^2) = \boxed{408}$

Answer 84MYS.

Consider the expression

$$7\left[4^3-2(4+3)\right]\div 7+2$$

The objective is to evaluate the given expression.

$7\left[4^3-2(4+3)\right]\div 7+2=7\left[4^3-2(5)\right]\div 7+2$ Evaluate the inside most expression first

$=7\left[64-2(5)\right]\div 7+2$ Evaluate power inside

grouping symbol

$=7[64-10]\div 7+2$ Evaluate expression inside grouping symbol

$=7(54)\div 7+2$ Evaluate expression inside grouping symbol

$=378\div 7+2$ Multiply 7 by 54

$=54+2$ Divide 378 by 7

$=56$ Add

Therefore,

$$7\left[4^3-2(4+3)\right]\div 7+2=\boxed{56}$$