Chapter 6. Solving Linear Inequalities

Ex. 6.3

Answer 1CU.

Consider the following equation

$$-5h+6=-7$$

The objective is to solve the equation and compare with the given inequality.

Simplify the given equation by subtracting 6 on both sides.

$$-5h+6=-7$$
$$-5h+6-6=-7-6$$
$$-5h=-13$$

Now divide both sides with -5 in order to calculate the value of h.

$$-5h=-13$$
$$\frac{-\cancel{5}h}{-\cancel{5}}=\frac{-13}{-5}$$
$$h=\frac{13}{5}$$

Therefore, the solution of the given equation is $\boxed{h=\frac{13}{5}}$.

Now consider the following equation

$$-5h+6\le -7$$

Simplify the given equation by subtracting 6 on both sides.

$$-5h+6\le -7$$
$$-5h+6-6\le -7-6$$
$$-5h\le -13$$

Whenever a true inequality is multiplied or divided by the same negative number, the direction of the inequality symbol should be reversed.

Simplify the inequality by dividing both sides by -5 and change the inequality symbol.

$$-5h \le -13$$
$$\frac{-\cancel{5}h}{-\cancel{5}} \ge \frac{-13}{-5}$$
$$h \ge \frac{13}{5}$$

Therefore, the solution of the inequality is $\boxed{h \ge \frac{13}{5}}$.

Both the equation is solved in the similar approach, except the inequality needs to change the symbol because of the negative number.

Answer 1RM.

The objective is to determine the given compound statement is true or false

A compound statement here is given as “A hexagon has six sides, or an octagon has seven sides”.

In this case compound statement is connected by “or”, which means any one of the simple statements should be true.

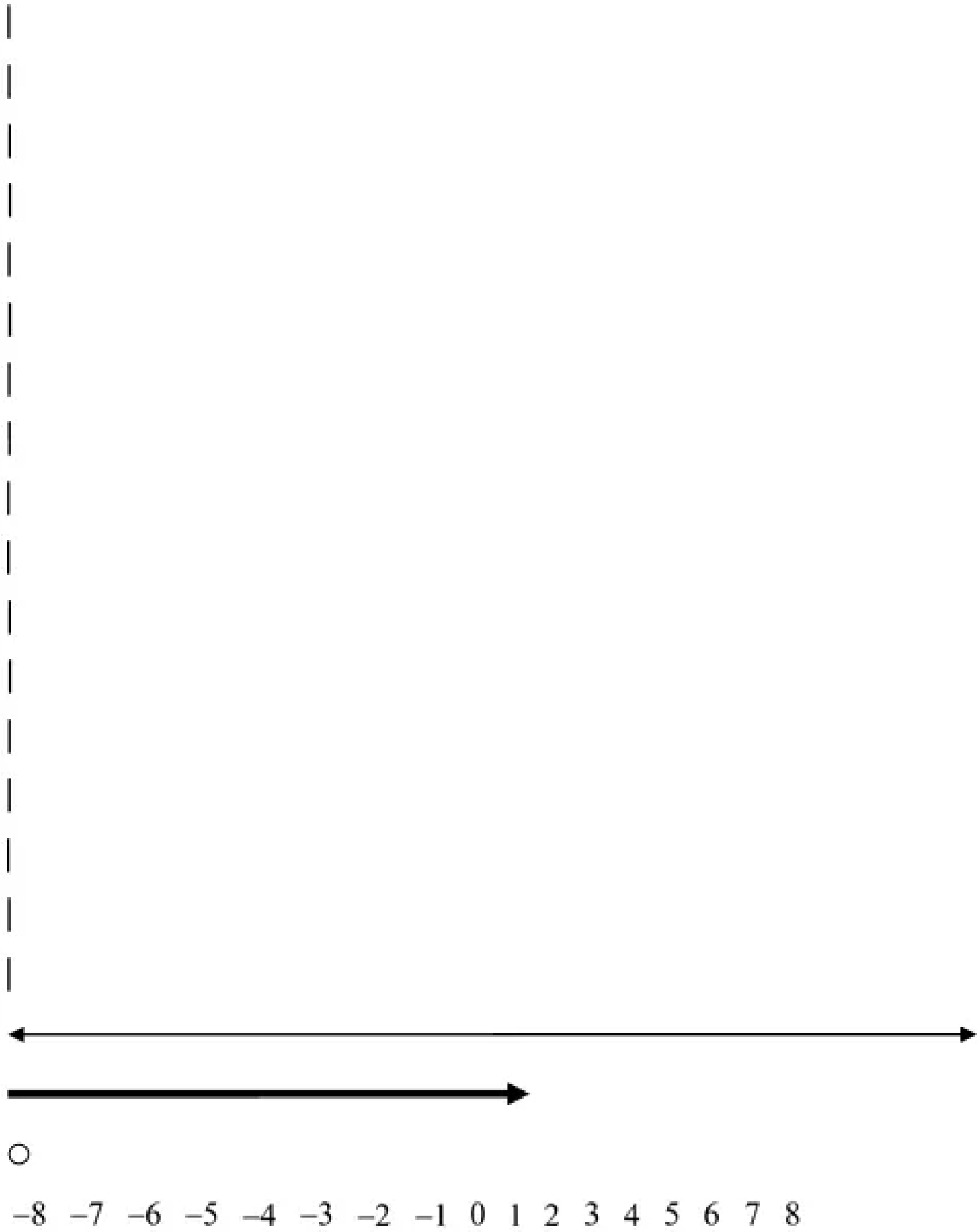
Here a hexagon has six sides, which is a true statement. But an octagon has seven sides is a false statement.

Hence, one of the statements is true, the component statement is true.

Answer is **True.**

Answer 2CU.

Consider the following graph.



The objective is to express the above graphed solution into a multi step inequality equality form.

The arrow pointing towards right tells that it is greater than -1 and open circle tells that it is not included in the inequality.

This can be expressed as

$$x > -1$$

This normal inequality needs to be converted into multi-step inequality. Multiply 3 on both sides and add 4 on both sides.

$$x > -1$$
$$3x + 4 > -1 \times 3 + 4$$
$$3x + 4 > -3 + 4$$
$$3x + 4 > 1$$

Therefore, the solution of the given graph in multi-step form is expressed as $\boxed{3x + 4 > 1}$.

Answer 2RM.

The objective is to determine the given compound statement is true or false

A compound statement here is given as "An octagon has eight sides, *and* a pentagon has six sides".

In this case compound statement is connected by "*and*", which means both the simple statements should be true.

Here an octagon has eight sides, which is a true statement. But a pentagon has six sides is a false statement.

Hence, one of the statements is false; the component statement is also false.

Answer is **FALSE.**

Answer 3CU.

The objective is to define the individual steps for the given solution.

The original inequality given is

Distributive Property

Expand the given inequality based on distributive property.

$$3a - 21 + 9 \le 21$$

Hence, the step "a" is **Distributive Property**.

Simplifying it give us

$$3a - 12 \le 21$$

Add 12 on both sides

$$3a - 12 + 12 \le 21 + 12$$

Hence, step "b" is **Adding 12 on both sides**.

Further on simplification gives

$$3a \le 33$$

Divide both sides with 3.

Hence step "c" is **Dividing 3 with both sides**.

$$\frac{3a}{3} \le \frac{33}{3}$$
$$a \le 11$$

Answer 3RM.

The objective is to determine the given compound statement is true or false

A compound statement here is given as "A pentagon has five sides, *and* a hexagon has six sides".

In this case compound statement is connected by "*and*", which means both the simple statements should be true.

Here a pentagon has six sides, which is a true statement. A hexagon has six sides is also true statement.

Hence, both the statements are true; therefore, the component statement is also true.

Answer is **TRUE.**

Answer 4CU.

Consider the following inequality

$$-4y - 23 < 19$$

The objective is to solve the inequality and check the solution.

Simplify the given equation by adding 23 on both sides.

$$-4y - 23 < 19$$
$$-4y - 23 + 23 < 19 + 23$$
$$-4y < 42$$

Whenever a true inequality is multiplied or divided by the same negative number, the direction of the inequality symbol should be reversed.

Simplify the inequality by dividing both sides by -4 and change the inequality symbol.

$$-4y < 42$$
$$\frac{-\cancel{4}y}{-\cancel{4}} > \frac{\overset{21}{\cancel{42}}}{-\underset{2}{\cancel{4}}}$$
$$y > -\frac{21}{2}$$
$$y > -10.5$$

Therefore, the solution set represents as $\boxed{\{y \mid y > -10.5\}}$.

In order to check the solution consider $y=-10$

Substitute $y=-10$ in the given inequality

$$-4y-23<19$$
$$-4\times(-10)-23<19$$
$$40-23<19$$
$$17<19$$

The value of $y=-24$ satisfies the given inequality.

Now consider $y=-12$

Substitute $y=-12$ in the given inequality

$$-4y-23<19$$
$$-4\times(-12)-23<19$$
$$48-23<19$$
$$25 \not< 19$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{y \mid y>-10.5\}$.

Answer 4RM.

The objective is to determine the given compound statement is true or false

A compound statement here is given as "A triangle has four sides, *or* an octagon does not have seven sides".

In this case compound statement is connected by "*or*", which means any one of the simple statements should be true.

Here a triangle has four sides, which is a false statement. But an octagon has does not have seven sides is a true statement.

Hence, one of the statements is true, the component statement is true.

Answer is **True.**

Answer 5CU.

Consider the following inequality

$$\frac{2}{3}r+9\geq -3$$

The objective is to solve the inequality and check the solution.

Simplify the given equation by subtracting 9 on both sides.

$$\frac{2}{3}r+9\geq -3$$
$$\frac{2}{3}r+9-9\geq -3-9$$
$$\frac{2}{3}r\geq -12$$

Answer 5RM.

The objective is to determine the given compound statement is true or false

A compound statement here is given as "A pentagon has three sides, *or* an octagon has ten sides".

In this case compound statement is connected by "*or*", which means any one of the simple statements should be true.

Here a pentagon has three sides, which is a false statement. An octagon has ten sides is a also false statement.

Hence, none of the statements is true, the component statement is false.

Answer is **FALSE.**

Answer 6CU.

Consider the following inequality

$$7b+11>9b-13$$

The objective is to solve the inequality and check the solution.

Simplify the given equation by subtracting 7b on both sides.

$$7b+11>9b-13$$
$$7b+11-7b>9b-13-7b$$
$$11>2b-13$$

Now further simply the above inequality by adding 13 both sides

$$11 > 2b - 13$$
$$11 + 13 > 2b - 13 + 13$$
$$24 > 2b$$
$$2b < 24$$

Simplify the inequality by dividing both sides by 2.

$$2b < 24$$
$$\frac{\cancel{2}b}{\cancel{2}} < \frac{\overset{12}{\cancel{24}}}{\cancel{2}}$$
$$b < 12$$

Therefore, the solution set represents as $\boxed{\{b \mid b < 12\}}$.

In order to check the solution consider $b = 2$

Substitute $b = 2$ in the given inequality

$$7b + 11 > 9b - 13$$
$$7 \times 2 + 11 > 9 \times 2 - 13$$
$$14 + 11 > 18 - 13$$
$$23 > 5$$

The value of $b = 2$ satisfies the given inequality.

Now consider $b = 13$

Substitute $b = 13$ in the given inequality

$$7b + 11 > 9b - 13$$
$$7 \times 13 + 11 > 9 \times 13 - 13$$
$$91 + 11 > 117 - 13$$
$$102 \not> 104$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{b \mid b < 12\}$.

Answer 6RM.

The objective is to determine the given compound statement is true or false

A compound statement here is given as "A square has four sides, *or* a hexagon has six sides".

In this case compound statement is connected by "*or*", which means any one of the simple statements should be true.

Here a square has four sides, which is a true statement. A hexagon has six sides is also a true statement.

Hence, both of the statements are true; therefore, the component statement is true.

Answer is **TRUE.**

Answer 7CU.

Consider the following inequality

$$-5(g+4) > 3(g-4)$$

The objective is to solve the inequality and check the solution.

The grouped numbers can be simplified by using distributed property.

$$\begin{aligned}&-5(g+4) > 3(g-4)\\&-5g-20 > 3g-12\end{aligned}$$

Simplify the above inequality by subtracting 3g both sides

$$\begin{aligned}&-5g-20 > 3g-12\\&-5g-20-3g > 3g-12-3g\\&-8g-20 > -12\end{aligned}$$

Now further simplify by adding 20 on both side

$$\begin{aligned}&-8g-20+20 > -12+20\\&-8g > 8\end{aligned}$$

Whenever a true inequality is multiplied or divided by the same negative number, the direction of the inequality symbol should be reversed.

Simplify the inequality by dividing both sides by -8 and change the inequality symbol.

$$\begin{aligned}&-8g > 8\\&\frac{-8g}{-8} < \frac{8}{-8}\\&g < -1\end{aligned}$$

Therefore, the solution set represents as $\boxed{\{g \mid g < -1\}}$.

In order to check the solution consider $g=-2$

Substitute $g=-2$ in the given inequality

$$-5(g+4)>3(g-4)$$
$$-5(-2+4)>3(-2-4)$$
$$-5(2)>3(-6)$$
$$-10>-18$$

The value of $g=-2$ satisfies the given inequality.

Now consider $g=1$

Substitute $g=1$ in the given inequality

$$-5(g+4)>3(g-4)$$
$$-5(1+4)>3(1-4)$$
$$-5(5)>3(-3)$$
$$-25 \not> -9$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{g \mid g<-1\}$.

Answer 7RM.

The objective is to determine the given compound statement is true or false

A compound statement here is given $5<4 \text{ or } 8<6$

In this case compound statement is connected by "*or*", which means any one of the simple statements should be true.

Here first simple statement

$5<4$ Means 4 is greater than 5, which is a false statement.

Second statement

$8<6$ Means 6 is greater than 8, which is also a false statement.

Hence, both of the statements are false; therefore, the component statement is false.

Answer is **FALSE.**

Answer 8CU.

Consider the following inequality

$$3+5t \le 3(t+1)-4(2-t)$$

The objective is to solve the inequality and check the solution.

The grouped numbers can be simplified by using distributed property.

$$3+5t \le 3(t+1)-4(2-t)$$
$$3+5t \le 3t+3-8+4t$$

Combine the like terms

$$3+5t \le 7t-5$$

Simplify the above inequality by subtracting 5t both sides

$$3+5t \le 7t-5$$
$$3+5t-5t \le 7t-5-5t$$
$$3 \le 2t-5$$

Now further simplify by adding 5 on both side

$$3 \le 2t-5$$
$$3+5 \le 2t-5+5$$
$$8 \le 2t$$

Simplify the inequality by dividing both sides by 2.

$$8 \le 2t$$
$$\frac{8}{2} \le \frac{2t}{2}$$
$$4 \le t$$
$$t \ge 4$$

Therefore, the solution set represents as $\boxed{\{t \mid t \ge 4\}}$.

In order to check the solution consider $t=4$

Substitute $t=4$ in the given inequality

$$3+5t \le 3(t+1)-4(2-t)$$
$$3+5\times 4 \le 3(4+1)-4(2-4)$$
$$3+20 \le 2\times 5-4(2-4)$$
$$-10 > -18$$

The value of $t=4$ satisfies the given inequality.

Answer 8RM.

The objective is to determine the given compound statement is true or false

A compound statement here is given $-1>0$ and $1<5$

In this case compound statement is connected by "*and*", which means both the simple statements should be true.

Here first simple statement

$-1>0$ Means -1 is greater than 0, which is a false statement.

Second statement

$1<5$ Means 1 is less than 5, which is a true statement.

Hence, one of the statements is false; the component statement is also false.

Answer is **FALSE.**

Answer 9CU.

The objective is to write the inequality for the given sentence.

Consider the number as n. seven minus two time's number n is less than three times the number n plus thirty-two.

This can be expressed as following inequality

$$7-2n<3n+32$$

Simplify the above inequality by adding 2n on both sides

$$7-2n<3n+32$$
$$7-2n+2n<3n+2n+32$$
$$7<5n+32$$

Further simplify the above inequality by subtracting 32 on both sides

$$7-32<5n+32-32$$
$$-25<5n$$
$$5n>-25$$

Simplify the inequality by dividing both sides by 5.

The inequalities can be expressed as

$$5n>-25$$
$$\frac{5n}{5}>-\frac{25}{5}$$
$$n>-5$$

Therefore, the solution set represents as $\boxed{\{n \mid n>-5\}}$.

In order to check the solution consider $n=1$

Substitute $n=1$ in the given inequality

$$7-2n<3n+32$$
$$7-2\times1<3\times1+32$$
$$5<35$$

The value of $n=1$ satisfies the given inequality.

Now consider $n=-6$

Substitute $n=-6$ in the given inequality

$$7-2n<3n+32$$
$$7-2\times(-6)<3\times(-6)+32$$
$$7+12<-18+32$$
$$19 \not< 14$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{n \mid n>-5\}$.

Answer 9RM.

The objective is to determine the given compound statement is true or false

A compound statement here is given $4>0$ and $-4<0$

In this case compound statement is connected by "*and*", which means both the simple statements should be true.

Here first simple statement

$4>0$ Means 4 is greater than 0, which is a true statement.

Second statement

$-4<0$ Means -4 is less than 0, which is a true statement.

Hence, both the statements are true; therefore, the component statement is also true.

Answer is **TRUE.**

Answer 10CU.

The objective is to write the inequality for the given stamen and solve it.

Consider the number as n. The amount paid to sales person is $22,000 plus 5% of n. This should be greater than $35000.

This can be expressed as following inequality

$$\$22,000 + 5\%n > \$35,000$$
$$22,000 + 0.05n > 35,000$$

Simplify the above inequality by subtracting 22,000 on both sides

$$22,000 + 0.05n > 35,000$$
$$22,000 + 0.05n - 22,000 > 35,000 - 22,000$$
$$0.05n > 13,000$$

Further simplify the above inequality by dividing both sides with 0.05

$$0.05n > 13,000$$
$$\frac{0.05n}{0.05} > \frac{13,000}{0.05}$$
$$n > 260,000$$

Therefore, the solution set represents as $\boxed{\{n \mid n > 260,000\}}$.

Hence, the salesperson needs to make higher than $260,000.

Answer 10RM.

The objective is to determine the given compound statement is true or false

A compound statement here is given $0 = 0 \text{ or } -2 > -3$

In this case compound statement is connected by "*or*", which means any one of the simple statements should be true.

Here first simple statement

$0 = 0$ Means 0 equal to 0, which is a true statement.

Second statement

$-2 > -3$ Means -2 is greater than -3, which is a true statement.

Hence, both of the statements are true; therefore, the component statement is true.

Answer is **TRUE.**

Answer 11PA.

The objective is to define the individual steps for the given solution.

The original inequality given is

$$\frac{2}{5}w+7\le -9$$

Expand the given inequality based on distributive property.

Simplifying the given equation by subtracting 7 on both sides

$$\frac{2}{5}w+7\le -9$$

$$\frac{2}{5}w+7-7\le -9-7$$

Hence, step "a" is **Subtracting 7 on both sides**.

Further on simplification gives

$$\frac{2}{5}w\le -16$$

Multiply both sides with 5/2.

$$\frac{2}{5}w\times\frac{5}{2}\le -16\times\frac{5}{2}$$

Hence step "b" is **Multiply both sides with 5/2**.

$$w\le -1\overset{8}{\cancel{6}}\times\frac{5}{\cancel{2}}$$

$$w\le -40$$

Answer 11RM.

The objective is to determine the given compound statement is true or false

A compound statement here is given $5\neq 5$ or $-1>-4$

In this case compound statement is connected by "*or*", which means any one of the simple statements should be true.

Here first simple statement

$5\neq 5$ Means 5 not equal to 5, which is a false statement.

Second statement

$-1>-4$ Means -1 is greater than -4, which is a true statement.

Hence, one of the statements is true, the component statement is true.

Answer is **True.**

Answer 12PA.

The objective is to define the individual steps for the given solution.

The original inequality given is

$$m > \frac{15-2m}{-3}$$

Expand the given inequality based on distributive property.

Whenever a true inequality is multiplied or divided by the same negative number, the direction of the inequality symbol should be reversed.

Simplifying the given equation by multiplying both sides by -3 and change the inequality symbol.

$$-3 \times m < -3 \times \frac{15-2m}{-3}$$

Hence, step “a” is **Multiplying both sides by -3 and change the inequality symbol**.

Further on simplification gives

$$-3 \times m < -\cancel{3} \times \frac{15-2m}{-\cancel{3}}$$

$$-3m < 15-2m$$

Add both sides with 2m

$$-3m+2m < 15-2m+2m$$

$$-m < 15$$

Hence step “b” is **Add 2m on both sides**.

Finally multiply both sides by -1 and change the inequality symbol.

$$-m < 15$$

$$-1 \times -m > -1 \times 15$$

$$m > -15$$

Hence step “c” is **multiply both sides by -1**.

Therefore, the solution set represents as $\{m \mid m > -15\}$.

Answer 12RM.

The objective is to determine the given compound statement is true or false

A compound statement here is given $0>3$ and $2>-2$

In this case compound statement is connected by "*and*", which means both the simple statements should be true.

Here first simple statement

$0>3$ Means 0 is greater than 3, which is a false statement.

Second statement

$2>-2$ Means 2 is greater than -2, which is a true statement.

Hence, one of the statements is false; the component statement is also false.

Answer is **FALSE.**

Answer 13PA.

Consider the following inequality

$$4(t-7)\le 2(t+9)$$

The objective is to solve the inequality.

The grouped numbers can be simplified by using distributed property.

$$4(t-7)\le 2(t+9)$$
$$4t-28\le 2t+18$$

Simplify the above inequality by subtracting 2t both sides

$$4t-28\le 2t+18$$
$$4t-28-2t\le 2t+18-2t$$
$$2t-28\le 18$$

Now further simplify by adding 28 on both side

$$2t-28\le 18$$
$$2t-28+28\le 18+28$$
$$2t\le 46$$

Simplify the inequality by dividing both sides by 2.

$$2t\le 46$$
$$\frac{2t}{2}\le\frac{\overset{23}{\cancel{46}}}{\cancel{2}}$$
$$t\le 23$$

Therefore, the solution set represents as $\boxed{\{t\mid t\le 23\}}$.

In order to check the solution consider $t = 23$

Substitute $t = 23$ in the given inequality

$$4(t-7) \le 2(t+9)$$
$$4(23-7) \le 2(23+9)$$
$$4 \times 16 \le 2 \times 32$$
$$64 \le 64$$

The value of $t = 23$ satisfies the given inequality.

In order to check the solution consider $t = 25$

Substitute $t = 25$ in the given inequality

$$4(t-7) \le 2(t+9)$$
$$4(25-7) \le 2(25+9)$$
$$4 \times 18 \le 2 \times 34$$
$$72 \not\le 68$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{t \mid t \le 23\}$.

Answer 14PA.

Consider the following inequality

$$-5(k+4) > 3(k-4)$$

The objective is to solve the inequality.

The grouped numbers can be simplified by using distributed property.

$$-5(k+4) > 3(k-4)$$
$$-5k - 20 > 3k - 12$$

Simplify the above inequality by subtracting 3k both sides

$$-5k-20>3k-12$$
$$-5k-20-3k>3k-12-3k$$
$$-8k-20>-12$$

Now further simplify by adding 20 on both side

$$-8k-20>-12$$
$$-8k-20+20>-12+20$$
$$-8k>8$$

Whenever a true inequality is multiplied or divided by the same negative number, the direction of the inequality symbol should be reversed.

Simplifying the given equation by dividing both sides by -8 and change the inequality symbol.

$$-8k>8$$
$$\frac{-8k}{-8}<\frac{8}{-8}$$
$$k<-1$$

Therefore, the solution set represents as $\boxed{\{k \mid k<-1\}}$.

In order to check the solution consider $k=-2$

Substitute $k=-2$ in the given inequality

$$-5(k+4)>3(k-4)$$
$$-5(-2+4)>3(-2-4)$$
$$-5\times 2>3\times -6$$
$$-10>-18$$

The value of $k=-2$ satisfies the given inequality.

In order to check the solution consider $k=1$

Substitute $k=1$ in the given inequality

$$-5(k+4)>3(k-4)$$
$$-5(1+4)>3(1-4)$$
$$-5\times 5>3\times -3$$
$$-25 \not> -9$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{k \mid k<-1\}$.

Answer 15PA.

Consider the following inequality

$$-3t+6\le -3$$

The objective is to solve the inequality and check your solution.

Simplify the above inequality by subtracting 6 on both sides

$$-3t+6\le -3$$
$$-3t+6-6\le -3-6$$
$$-3t\le -9$$

Whenever a true inequality is multiplied or divided by the same negative number, the direction of the inequality symbol should be reversed.

Simplifying the given equation by dividing both sides by -3 and change the inequality symbol.

$$-3t\le -9$$
$$\frac{-3t}{-3}\ge\frac{-9}{-3}$$
$$t\ge 3$$

Therefore, the solution set represents as $\boxed{\{t\mid t\ge 3\}}$.

In order to check the solution consider $t=3$

Substitute $t=3$ in the given inequality

$$-3t+6\le -3$$
$$-3\times 3+6\le -3$$
$$-9+6\le -3$$
$$-3\le -3$$

The value of $t=3$ satisfies the given inequality.

In order to check the solution consider $t=2$

Substitute $t=2$ in the given inequality

$$-3t+6\le -3$$
$$-3\times 2+6\le -3$$
$$-6+6\le -3$$
$$0\not\le -3$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{t\mid t\ge 3\}$.

Answer 16PA.

Consider the following inequality

$$-5-8f>59$$

The objective is to solve the inequality and check your solution.

Simplify the above inequality by adding 5 on both sides

$$-5-8f>59$$
$$-5-8f+5>59+5$$
$$-8f>64$$

Whenever a true inequality is multiplied or divided by the same negative number, the direction of the inequality symbol should be reversed.

Simplifying the given equation by dividing both sides by -8 and change the inequality symbol.

$$-8f>64$$
$$\frac{-8f}{-8}<\frac{64}{-8}$$
$$f<-8$$

Therefore, the solution set represents as $\boxed{\{f \mid f<-8\}}$.

In order to check the solution consider $f=-10$

Substitute $f=-10$ in the given inequality

$$-5-8f>59$$
$$-5-8\times(-10)>59$$
$$-5+80>59$$
$$75>59$$

The value of $f=-10$ satisfies the given inequality.

In order to check the solution consider $f=-6$

Substitute $f=-6$ in the given inequality

$$-5-8f>59$$
$$-5-8\times(-6)>59$$
$$-5+48>59$$
$$43 \not> 59$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{f \mid f<-8\}$.

Answer 17PA.

Consider the following inequality

$$-2-\frac{d}{5}<23$$

The objective is to solve the inequality and check your solution.

Simplify the above inequality by adding 2 on both sides

$$-2-\frac{d}{5}<23$$
$$-2-\frac{d}{5}+2<23+2$$
$$-\frac{d}{5}<25$$

Whenever a true inequality is multiplied or divided by the same negative number, the direction of the inequality symbol should be reversed.

Simplifying the given equation by multiplying both sides by -5 and change the inequality symbol.

$$-\frac{d}{5}<25$$
$$-\frac{d}{\cancel{5}}\times-\cancel{5}>25\times-5$$
$$d>-125$$

Therefore, the solution set represents as $\boxed{\{d \mid d>-125\}}$.

In order to check the solution consider $d=-100$

Substitute $d=-100$ in the given inequality

$$-2-\frac{d}{5}<23$$
$$-2-\frac{\left(-\overset{20}{100}\right)}{\cancel{5}}<23$$
$$-2+20<23$$
$$18<23$$

The value of $d=-100$ satisfies the given inequality.

In order to check the solution consider $d=-150$

Substitute $d=-150$ in the given inequality

$$-2-\frac{d}{5}<23$$

$$-2-\frac{\left(-\overset{30}{150}\right)}{\cancel{5}}<23$$

$$-2+30<23$$

$$28 \not< 23$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{d \mid d>-125\}$.

Answer 18PA.

Consider the following inequality

$$\frac{w}{8}-13>-6$$

The objective is to solve the inequality and check your solution.

Simplify the above inequality by adding 13 on both sides

$$\frac{w}{8}-13>-6$$

$$\frac{w}{8}-13+13>-6+13$$

$$\frac{w}{8}>7$$

Simplifying the given equation by multiplying both sides by 8

$$\frac{w}{8}>7$$

$$\frac{w}{8}\times 8>7\times 8$$

$$w>56$$

Therefore, the solution set represents as $\boxed{\{w \mid w>56\}}$.

In order to check the solution consider $w = 64$

Substitute $w = 64$ in the given inequality

$$\frac{w}{8} - 13 > -6$$

$$\frac{\cancel{64}^{8}}{\cancel{8}} - 13 > -6$$

$$-5 > -6$$

The value of $w = 64$ satisfies the given inequality.

In order to check the solution consider $w = 48$

Substitute $w = 48$ in the given inequality

$$\frac{w}{8} - 13 > -6$$

$$\frac{\cancel{48}^{6}}{\cancel{8}} - 13 > -6$$

$$-7 \not> -6$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{w \mid w > 56\}$.

Answer 19PA.

Consider the following inequality

$$7q - 1 + 2q \leq 29$$

The objective is to solve the inequality and check your solution.

Combine the like terms in the given equation

$$9q - 1 \leq 29$$

Simplify the above inequality by adding 1 on both sides

$$9q - 1 \leq 29$$

$$9q - 1 + 1 \leq 29 + 1$$

$$9q \leq 30$$

Simplify the given equation by dividing both sides by 9.

$$9q \le 30$$

$$\frac{9q}{9} \le \frac{30}{9} \qquad 3\times 9 = 27$$

$$q \le \frac{30}{9} \qquad 3.334\times 9 = 30$$

$$q \le 3.334$$

Therefore, the solution set represents as $\boxed{\{q \mid q \le \frac{30}{9}\}}$.

In order to check the solution consider $q = 3$

Substitute $q = 3$ in the given inequality

$$7q - 1 + 2q \le 29$$
$$7\times 3 - 1 + 2\times 3 \le 29$$
$$21 - 1 + 6 \le 29$$
$$26 \le 29$$

The value of $q = 3$ satisfies the given inequality.

In order to check the solution consider $q = 4$

Substitute $q = 4$ in the given inequality

$$7q - 1 + 2q \le 29$$
$$7\times 4 - 1 + 2\times 4 \le 29$$
$$28 - 1 + 8 \le 29$$
$$35 \not\le 29$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{q \mid q \le \frac{30}{9}\}$.

Answer 20PA.

Consider the following inequality

$$8a + 2 - 10a \le 20$$

The objective is to solve the inequality and check your solution.

Combine the like terms in the given equation

$$2 - 2a \le 20$$

Simplify the above inequality by subtracting 2 on both sides

$$2 - 2a \le 20$$
$$2 - 2a - 2 \le 20 - 2$$
$$-2a \le 18$$

Whenever a true inequality is multiplied or divided by the same negative number, the direction of the inequality symbol should be reversed.

Simplifying the given equation by dividing both sides by -2 and change the inequality symbol.

$$-2a \le 18$$
$$\frac{-2a}{-2} \ge \frac{18}{-2} \quad 2 \times 9 = 18$$
$$a \ge -9$$

Therefore, the solution set represents as $\boxed{\{a \mid a \ge -9\}}$.

In order to check the solution consider $a = -9$

Substitute $a = -9$ in the given inequality

$$8a + 2 - 10a \le 20$$
$$8 \times -9 + 2 - 10 \times -9 \le 20$$
$$-72 + 2 + 90 \le 20$$
$$20 \le 20$$

The value of $a = -9$ satisfies the given inequality.

In order to check the solution consider $a = -10$

Substitute $a = -10$ in the given inequality

$$8a + 2 - 10a \le 20$$
$$8 \times -10 + 2 - 10 \times -10 \le 20$$
$$-80 + 2 + 100 \le 20$$
$$22 \not\le 20$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{a \mid a \ge -9\}$.

Answer 21PA.

Consider the following inequality

$$9r + 15 \le 24 + 10r$$

The objective is to solve the inequality and check your solution.

Simplify the above inequality by subtracting 9r on both sides

$$9r + 15 \le 24 + 10r$$
$$9r + 15 - 9r \le 24 + 10r - 9r$$
$$15 \le 24 + r$$

Simplify the given equation by subtracting 24 on both sides.

$$15 \le 24 + r$$
$$15 - 24 \le 24 + r - 24$$
$$-9 \le r$$
$$r \ge -9$$

Therefore, the solution set represents as $\boxed{\{r \mid r \ge -9\}}$.

In order to check the solution consider $r = -9$

Substitute $r = -9$ in the given inequality

$$9r + 15 \le 24 + 10r$$
$$9 \times -9 + 15 \le 24 + 10 \times -9$$
$$-81 + 15 \le 24 - 90$$
$$-66 \le -66$$

The value of $a = -9$ satisfies the given inequality.

In order to check the solution consider $r = -10$

Substitute $r = -10$ in the given inequality

$$9r + 15 \le 24 + 10r$$
$$9 \times -10 + 15 \le 24 + 10 \times -10$$
$$-90 + 15 \le 24 - 100$$
$$-75 \not\le -76$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{r \mid r \ge -9\}$.

Answer 22PA.

Consider the following inequality

$$13k - 11 > 7k + 37$$

The objective is to solve the inequality and check your solution.

Simplify the above inequality by subtracting 7k on both sides

$$13k - 11 > 7k + 37$$
$$13k - 11 - 7k > 7k + 37 - 7k$$
$$6k - 11 > 37$$

Simplify the given equation by adding 11 on both sides.

$$6k - 11 > 37$$
$$6k - 11 + 11 > 37 + 11$$
$$6k > 48$$

Further simplify the above relation by dividing both sides with 6.

$$6k > 48$$
$$\frac{\cancel{6}k}{\cancel{6}} > \frac{\overset{8}{\cancel{48}}}{\cancel{6}}$$
$$k > 8$$

Therefore, the solution set represents as $\boxed{\{k \mid k > 8\}}$.

In order to check the solution consider $k = 9$

Substitute $k = 9$ in the given inequality

$$13k - 11 > 7k + 37$$
$$13 \times 9 - 11 > 7 \times 9 + 37$$
$$117 - 11 > 63 + 37$$
$$106 > 100$$

The value of $k = 9$ satisfies the given inequality.

In order to check the solution consider $k = 6$

Substitute $k = 6$ in the given inequality

$$13k - 11 > 7k + 37$$
$$13 \times 6 - 11 > 7 \times 6 + 37$$
$$78 - 11 > 42 + 37$$
$$67 \not> 79$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{k \mid k > 8\}$.

Answer 23PA.

Consider the following inequality

$$\frac{2v - 3}{5} \geq 7$$

The objective is to solve the inequality and check your solution.

Simplify the above inequality by multiplying both sides with 5.

$$\frac{2v - 3}{5} \geq 7$$
$$\frac{2v - 3}{\cancel{5}} \times \cancel{5} \geq 7 \times 5$$
$$2v - 3 \geq 35$$

Simplify the given equation by adding 3 on both sides.

$$2v-3 \geq 35$$
$$2v-3+3 \geq 35+3$$
$$2v \geq 38$$

Further simplify the above relation by dividing both sides with 2.

$$2v \geq 38$$
$$\frac{\cancel{2}v}{\cancel{2}} \geq \frac{\overset{19}{\cancel{38}}}{\cancel{2}}$$
$$v \geq 19$$

Therefore, the solution set represents as $\boxed{\{v \mid v \geq 19\}}$.

In order to check the solution consider $v=19$

Substitute $v=19$ in the given inequality

$$\frac{2v-3}{5} \geq 7$$
$$\frac{2\times 19-3}{5} \geq 7$$
$$\frac{38-3}{5} \geq 7$$
$$\frac{35}{5} \geq 7$$
$$7 \geq 7$$

The value of $v=19$ satisfies the given inequality.

In order to check the solution consider $v=14$

Substitute $v=14$ in the given inequality

$$\frac{2v-3}{5} \geq 7$$
$$\frac{2\times 14-3}{5} \geq 7$$
$$\frac{28-3}{5} \geq 7$$
$$\frac{25}{5} \geq 7$$
$$5 \ngeq 7$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{v \mid v \geq 19\}$.

Answer 24PA.

Consider the following inequality

$$\frac{3a+8}{2}<10$$

The objective is to solve the inequality and check your solution.

Simplify the above inequality by multiplying both sides with 2.

$$\frac{3a+8}{2}<10$$

$$\frac{3a+8}{\cancel{2}}\times\cancel{2}<10\times 2$$

$$3a+8<20$$

Simplify the given equation by subtracting 8 on both sides.

$$3a+8<20$$

$$3a+8-8<20-8$$

$$3a<12$$

Further simplify the above relation by dividing both sides with 3.

$$3a<12$$

$$\frac{\cancel{3}a}{\cancel{3}}<\frac{\overset{4}{\cancel{12}}}{\cancel{3}}$$

$$a<4$$

Therefore, the solution set represents as $\boxed{\{a\,|\,a<4\}}$.

In order to check the solution consider $a=2$

Substitute $a=2$ in the given inequality

$$\frac{3a+8}{2}<10$$

$$\frac{3\times 2+8}{2}<10$$

$$\frac{6+8}{2}<10$$

$$\frac{14}{2}<10$$

$$7<10$$

The value of $a=2$ satisfies the given inequality.

In order to check the solution consider $a=6$

Substitute $a=6$ in the given inequality

$$\frac{3a+8}{2}<10$$
$$\frac{3\times6+8}{2}<10$$
$$\frac{18+8}{2}<10$$
$$13 \not< 10$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{a \mid a<4\}$.

Answer 25PA.

Consider the following inequality

$$\frac{3w+5}{4}\geq 2w$$

The objective is to solve the inequality and check your solution.

Simplify the above inequality by multiplying both sides with 4.

$$\frac{3w+5}{4}\geq 2w$$
$$\frac{3w+5}{\cancel{4}}\times\cancel{4}\geq 2w\times4$$
$$3w+5\geq 8w$$

Simplify the given equation by subtracting 3w on both sides.

$$3w+5\geq 8w$$
$$3w+5-3w\geq 8w-3w$$
$$5\geq 5w$$

Further simplify the above relation by dividing both sides with 5.

$$5\geq 5w$$
$$\frac{\cancel{5}}{\cancel{5}}\geq\frac{\cancel{5}w}{\cancel{5}}$$
$$1\geq w$$
$$w\leq 1$$

Therefore, the solution set represents as $\boxed{\{w \mid w\leq 1\}}$.

In order to check the solution consider $w = 1$

Substitute $w = 1$ in the given inequality

$$\frac{3w+5}{4} \geq 2w$$
$$\frac{3\times1+5}{4} \geq 2\times1$$
$$\frac{\cancel{8}^{2}}{\cancel{4}} \geq 2$$
$$2 \geq 2$$

The value of $w = 1$ satisfies the given inequality.

In order to check the solution consider $w = 2$

Substitute $w = -1$ in the given inequality

$$\frac{3w+5}{4} \geq 2w$$
$$\frac{3\times2+5}{4} \geq 2\times2$$
$$\frac{11}{4} \geq 4$$
$$2.75 \not\geq 2$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{w \mid w \leq 1\}$.

Answer 26PA.

Consider the following inequality

$$\frac{5b+8}{3} < 3b$$

The objective is to solve the inequality and check your solution.

Simplify the above inequality by multiplying both sides with 3.

$$\frac{5b+8}{3} < 3b$$
$$\frac{5b+8}{\cancel{3}} \times \cancel{3} < 3b\times3$$
$$5b+8 < 9b$$

Simplify the given equation by subtracting 5b on both sides.

$$5b+8<9b$$
$$5b+8-5b<9b-5b$$
$$8<4b$$
$$4b>8$$

Further simplify the above relation by dividing both sides with 4.

$$4b>8$$
$$\frac{4b}{4}>\frac{8}{4}$$
$$b>2$$

Therefore, the solution set represents as $\boxed{\{b \mid b>2\}}$.

In order to check the solution consider $b=3$

Substitute $b=3$ in the given inequality

$$\frac{5b+8}{3}<3b$$
$$\frac{5\times3+8}{3}<3\times3 \quad 3\times9=27$$
$$\frac{28}{3}<9$$
$$9.334<9$$

The value of $b=3$ satisfies the given inequality.

In order to check the solution consider $b=1$

Substitute $b=1$ in the given inequality

$$\frac{5b+8}{3}<3b$$
$$\frac{5\times1+8}{3}<3\times1 \quad 3\times4=12$$
$$\frac{13}{3}<3$$
$$4.334 \not< 3$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{b \mid b>2\}$.

Answer 27PA.

Consider the following inequality

$$7+3t \le 2(t+3)-2(-1-t)$$

The objective is to solve the inequality and check the solution.

The grouped numbers can be simplified by using distributed property.

$$7+3t \le 2(t+3)-2(-1-t)$$
$$7+3t \le 2t+6+2+2t$$

Combine the like terms

$$7+3t \le 4t+8$$

Simplify the above inequality by subtracting 3t both sides

$$7+3t \le 4t+8$$
$$7+3t-3t \le 4t+8-3t$$
$$7 \le t+8$$

Now further simplify by subtracting 8 on both side

$$7 \le t+8$$
$$7-8 \le t+8-8$$
$$-1 \le t$$
$$t \ge -1$$

Therefore, the solution set represents as $\boxed{\{t \mid t \ge -1\}}$.

In order to check the solution consider $t=1$

Substitute $t=1$ in the given inequality

$$7+3t \le 2(t+3)-2(-1-t)$$
$$7+3\times 1 \le 2(1+3)-2(-1-1)$$
$$7+3 \le 2\times 4+2$$
$$10 \le 10$$

The value of $t=1$ satisfies the given inequality.

Now consider $t=-2$

Substitute $t=-2$ in the given inequality

$$7+3t \le 2(t+3)-2(-1-t)$$
$$7+3\times -2 \le 2(-2+3)-2(-1-(-2))$$
$$7-6 \le 2-2$$
$$1 \not\le 0$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{t \mid t \ge -1\}$.

Answer 28PA.

Consider the following inequality

$$5(2h-6)-7(h+7)>4h$$

The objective is to solve the inequality and check the solution.

The grouped numbers can be simplified by using distributed property.

$$5(2h-6)-7(h+7)>4h$$
$$10h-30-7h-49>4h$$

Combine the like terms

$$10h-30-7h-49>4h$$
$$3h-79>4h$$

Simplify the above inequality by subtracting 3h both sides

$$3h-79>4h$$
$$3h-79-3h>4h-3h$$
$$-79>h$$
$$h<-79$$

Therefore, the solution set represents as $\boxed{\{h \mid h<-79\}}$.

In order to check the solution consider $h=-80$

Substitute $h=-80$ in the given inequality

$$5(2h-6)-7(h+7)>4h$$
$$5(2\times(-80)-6)-7((-80)+7)>4\times(-80)$$
$$5(-160-6)-7(-73)>-320$$
$$-830+511>-320$$
$$-319>-320$$

The value of $t=1$ satisfies the given inequality.

Answer 29PA.

Consider the following inequality

$$3y+4>2(y+3)+y$$

The objective is to solve the inequality and check the solution.

The grouped numbers can be simplified by using distributed property.

$$3y+4>2(y+3)+y$$
$$3y+4>2y+6+y$$

Combine the like terms

$$3y+4>2y+6+y$$
$$3y+4>3y+6$$

Simplify the above inequality by subtracting 3y both sides

$$3y+4>3y+6$$
$$3y+4-3y>3y+6-3y$$
$$4\not>6$$

This inequality cannot be solved, as the y terms get cancelled and the existing number doesn't satisfy the inequality. The solution set is empty set.

Hence, no solution exits.

Answer 30PA.

Consider the following inequality

$$3-3(b-2)<13-3(b-6)$$

The objective is to solve the inequality and check the solution.

The grouped numbers can be simplified by using distributed property.

$$3-3(b-2)<13-3(b-6)$$
$$3-3b+6<13-3b+18$$

Combine the like terms

$$3-3b+6<13-3b+18$$
$$9-3b<31-3b$$

Simplify the above inequality by subtracting 3b both sides

$$9-3b<31-3b$$
$$9-3b+3b<31-3b+3b$$
$$9<31$$

This statement is true. This inequality eliminates b terms. The solution set is empty set.

Hence, the value of b can only be zero.

Answer 31PA.

Consider the following inequality

$$3.1v-1.4\geq 1.3v+6.7$$

The objective is to solve the inequality and check the solution.

Simplify the above inequality by subtracting 1.3v on both sides

$$3.1v-1.4\geq 1.3v+6.7$$
$$3.1v-1.4-1.3v\geq 1.3v+6.7-1.3v$$
$$1.8v-1.4\geq 6.7$$

Simplify the above inequality by subtracting y both sides

$$y+19>3y-3$$
$$y+19-y>3y-3-y$$
$$19>2y-3$$

Now further simplify by adding 3 on both side

$$19>2y-3$$
$$19+3>2y-3+3$$
$$22>2y$$

In order to check the solution consider $v=4.5$

Substitute $v=4.5$ in the given inequality

$$3.1v-1.4\geq 1.3v+6.7$$
$$3.1\times 4.5-1.4\geq 1.3\times 4.5+6.7$$
$$13.95-1.4\geq 5.85+6.7$$
$$12.55\geq 12.55$$

The value of $v=4.5$ satisfies the given inequality.

Now consider $v=4$

Substitute $v=4$ in the given inequality

$$3.1v-1.4\geq 1.3v+6.7$$
$$3.1\times 4.0-1.4\geq 1.3\times 4.0+6.7$$
$$12.4-1.4\geq 5.2+6.7$$
$$11.0\not\geq 11.9$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{v\,|\,v\geq 4.5\}$.

Answer 32PA.

Consider the following inequality

$$0.3(d-2)-0.8d>4.4$$

The objective is to solve the inequality and check the solution.

The grouped numbers can be simplified by using distributed property.

$$0.3(d-2)-0.8d>4.4$$
$$0.3d-0.6-0.8d>4.4$$

Combine the like terms

$$0.3d-0.6-0.8d>4.4$$
$$-0.6-0.5d>4.4$$

Simplify the above inequality by adding 0.6 on both sides

$$-0.6 - 0.5d > 4.4$$
$$-0.6 - 0.5d + 0.6 > 4.4 + 0.6$$
$$-0.5d > 5.0$$

Whenever a true inequality is multiplied or divided by the same negative number, the direction of the inequality symbol should be reversed.

Simplify the inequality by dividing both sides by -0.5 and change the inequality symbol.

$$-0.5d > 5.0$$
$$\frac{-0.5d}{-0.5} < \frac{5.0}{-0.5}$$
$$d < -10$$

Therefore, the solution set represents as $\boxed{\{d \mid d < -10\}}$.

In order to check the solution consider $d = -12$

Substitute $d = -12$ in the given inequality

$$0.3(d-2) - 0.8d > 4.4$$
$$0.3(-12-2) - 0.8 \times (-12) > 4.4$$
$$0.3 \times -14 + 0.8 \times 12 > 4.4$$
$$-4.2 + 9.6 > 4.4$$
$$5.4 > 4.4$$

The value of $d = -12$ satisfies the given inequality.

Answer 33PA.

Consider the following inequality

$$4(y+1) - 3(y-5) \geq 3(y-1)$$

The objective is to solve the inequality and check the solution.

The grouped numbers can be simplified by using distributed property.

$$4(y+1) - 3(y-5) \geq 3(y-1)$$
$$4y + 4 - 3y + 15 \geq 3y - 3$$

Combine the like terms

$$4y + 4 - 3y + 15 \geq 3y - 3$$
$$y + 19 > 3y - 3$$

Simplify the above inequality by subtracting y both sides

$$y+19>3y-3$$
$$y+19-y>3y-3-y$$
$$19>2y-3$$

Now further simplify by adding 3 on both side

$$19>2y-3$$
$$19+3>2y-3+3$$
$$22>2y$$

Simplify by dividing both sides with 2.

$$22>2y$$
$$\frac{22}{2}>\frac{2y}{2}$$
$$11>y$$
$$y<11$$

Therefore, the solution set represents as $\boxed{\{y \mid y<11\}}$.

Answer 34PA.

Consider the following inequality

$$5(x+4)-2(x+6)\geq 5(x+1)-1$$

The objective is to solve the inequality and check the solution.

The grouped numbers can be simplified by using distributed property.

$$5(x+4)-2(x+6)\geq 5(x+1)-1$$
$$5x+20-2x-12\geq 5x+5-4$$

Combine the like terms

$$5x+20-2x-12\geq 5x+5-4$$
$$3x-8>5x+1$$

Simplify the above inequality by subtracting 3x both sides

$$3x-8>5x+1$$
$$3x-8-3x>5x+1-3x$$
$$-8>2x+1$$

Now further simplify by subtracting 1 on both side

$$-8>2x+1$$
$$-8-1>2x+1-1$$
$$-9>2x$$

Simplify by dividing both sides with 2.

$$-9 > 2x$$

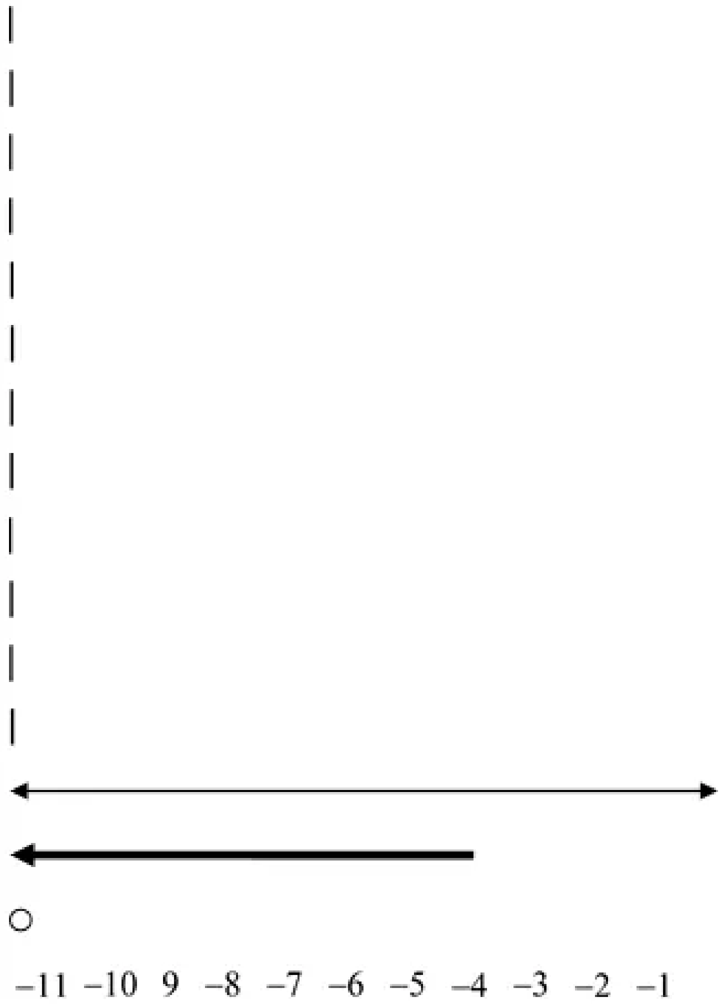
$$\frac{-9}{2} > \frac{2x}{2}$$

$$x < -\frac{9}{2}$$

Therefore, the solution set represents as $\boxed{\{x \mid x < -\frac{9}{2}\}}$.

The above solution set can be represented in the below graph

The inequality can be represented in the graph with the open circle and heavy arrow mark left to the number -4.5.



Answer 35PA.

The objective is to write the inequality for the given sentence.

Consider the number as n. One eight of a number (1/8) decreased by (minus) 5 is at least (greater or equal to) thirty 30.

This can be expressed as following inequality

$$\frac{1}{8}n-5\geq 30$$

Simplify the above inequality by adding 5 on both sides

$$\frac{1}{8}n-5\geq 30$$
$$\frac{1}{8}n-5+5\geq 30+5$$
$$\frac{1}{8}n\geq 35$$

Further simplify the above inequality by multiplying with 8 on both sides

$$\frac{1}{8}n\geq 35$$
$$\frac{1}{\cancel{8}}n\times\cancel{8}\geq 35\times 8 \quad 35\times 8=280$$
$$n\geq 280$$

Therefore, the solution set represents as $\boxed{\{n\,|\,n\geq 280\}}$.

In order to check the solution consider $n=280$

Substitute $n=280$ in the given inequality

$$\frac{1}{8}n-5\geq 30$$
$$\frac{1}{8}\times 280-5\geq 30$$
$$35-5\geq 30$$
$$30\geq 30$$

The value of $n=280$ satisfies the given inequality.

Now consider $n = 240$

Substitute $n = 240$ in the given inequality

$$\frac{1}{8}n - 5 \geq 30$$
$$\frac{1}{8} \times 240 - 5 \geq 30$$
$$30 - 5 \geq 30$$
$$25 \not\geq 30$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{n \mid n \geq 280\}$.

Answer 36PA.

The objective is to write the inequality for the given sentence.

Consider the number as n. Two thirds of a number (2/3) plus 8 is greater than twelve 12.

This can be expressed as following inequality

$$\frac{2}{3}n + 8 > 12$$

Simplify the above inequality by subtracting 8 on both sides

$$\frac{2}{3}n + 8 > 12$$
$$\frac{2}{3}n + 8 - 8 > 12 - 8$$
$$\frac{2}{3}n > 4$$

Further simplify the above inequality by multiplying with 3/2 on both sides

$$\frac{2}{3}n > 4$$
$$\frac{\cancel{2}}{\cancel{3}}n \times \frac{\cancel{3}}{\cancel{2}} > \overset{2}{\cancel{4}} \times \frac{3}{\cancel{2}}$$
$$n > 6$$

Therefore, the solution set represents as $\boxed{\{n \mid n > 6\}}$.

In order to check the solution consider $n=9$

Substitute $n=9$ in the given inequality

$$\frac{2}{3}n+8>12$$
$$\frac{2}{\cancel{3}}\times\overset{3}{\cancel{9}}+8>12$$
$$6+8>12$$
$$14>12$$

The value of $n=9$ satisfies the given inequality.

Now consider $n=3$

Substitute $n=3$ in the given inequality

$$\frac{2}{3}n+8>12$$
$$\frac{2}{\cancel{3}}\times\cancel{3}+8>12$$
$$2+8>12$$
$$10\not>12$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{n\,|\,n>6\}$.

Answer 37PA.

The objective is to write the inequality for the given sentence.

Consider the number as n. Negative four times (-4n) plus 9 is no more than (less than or equal to) number n minus 21.

This can be expressed as following inequality

$$-4n+9\le n-21$$

Simplify the above inequality by subtracting n on both sides

$$-4n+9\le n-21$$
$$-4n+9-n\le n-21-n$$
$$-5n+9\le -21$$

Further simplify the above inequality by subtracting 9 on both sides

$$-5n+9\le -21$$
$$-5n+9-9\le -21-9$$
$$-5n\le -30$$

Whenever a true inequality is multiplied or divided by the same negative number, the direction of the inequality symbol should be reversed.

Simplify the inequality by dividing both sides by -5 and change the inequality symbol.

$$-5n \le -30$$
$$\frac{-5n}{-5} \ge \frac{-30}{-5}$$
$$n \ge 6$$

Therefore, the solution set represents as $\boxed{\{n \mid n \ge 6\}}$.

In order to check the solution consider $n = 6$

Substitute $n = 6$ in the given inequality

$$-4n + 9 \le n - 21$$
$$-4 \times 6 + 9 \le 6 - 21$$
$$-24 + 9 \le -15$$
$$-15 \le -15$$

The value of $n = 6$ satisfies the given inequality.

Now consider $n = 3$

Substitute $n = 3$ in the given inequality

$$-4n + 9 \le n - 21$$
$$-4 \times 3 + 9 \le 3 - 21$$
$$-12 + 9 \le -18$$
$$-3 \not\le -18$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{n \mid n \ge 6\}$.

Answer 38PA.

The objective is to write the inequality for the given sentence.

Consider the number as n. Three times the sum of number and seven (n+7) is greater than five times the number less thirteen (n-13)

This can be expressed as following inequality

$$3(n+7) > 5(n-13)$$

The grouped numbers can be simplified by using distributed property.

$$3(n+7) > 5(n-13)$$
$$3n+21 > 5n-65$$

Simplify the above inequality by subtracting 3n on both sides

$$3n+21 > 5n-65$$
$$3n+21-3n > 5n-65-3n$$
$$21 > 2n-65$$

Further simplify the above inequality by adding 65 on both sides

$$21 > 2n-65$$
$$21+65 > 2n-65+65$$
$$86 > 2n$$

Simplify the inequality by dividing both sides by 2.

$$86 > 2n$$
$$\frac{86}{2} > \frac{2n}{2}$$
$$43 > n$$
$$n < 43$$

Therefore, the solution set represents as $\boxed{\{n \mid n < 43\}}$.

In order to check the solution consider $n = 40$

Substitute $n = 40$ in the given inequality

$$3(n+7) > 5(n-13)$$
$$3(40+7) > 5(40-13) \qquad 3\times 47 = 141$$
$$3\times 47 > 5\times 27 \qquad 5\times 27 = 135$$
$$141 > 135$$

The value of $n = 40$ satisfies the given inequality.

Now consider $n = 45$

Substitute $n = 45$ in the given inequality

$$3(n+7) > 5(n-13)$$
$$3(45+7) > 5(45-13)$$
$$3\times 52 > 5\times 32$$
$$156 \not> 160$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{n \mid n < 43\}$.

Answer 39PA.

The objective is to write the inequality for the given sentence.

The measure of an acute angle is less than 90 degrees. Given the measure is.

This can be expressed as following inequality

$$3a-15<90$$

Therefore, the inequality is expressed as $\boxed{3a-15<90}$.

Answer 40PA.

The objective is to write the inequality for the given sentence.

The measure of an acute angle is less than 90 degrees. Given the measure is.

This can be expressed as following inequality

$$3a-15<90$$

Simplify the above inequality by adding 15 on both sides

$$3a-15<90$$
$$3a-15+15<90+15$$
$$3a<105$$

Further simplify the above inequality by dividing with 3 on both sides

$$3a<105$$
$$\frac{3a}{3}<\frac{105}{3}$$
$$a<35$$

Hence, the acute is 35 degrees which is less than 90 degrees.

Therefore, the solution set represents as $\boxed{\{a \mid a<35\}}$.

Answer 41PA.

The objective is to write the inequality for the given situation.

Consider "s" as the fourth test score for Carmen. At least 92 should be scored to get A grade. The scores on three math tests were given were 91, 95 and 88.

This can be expressed as following inequality

$$\frac{91+95+88+s}{4}\geq 92$$

Therefore, the inequality for the given situation is expressed as $\boxed{\frac{91+95+88+s}{4}\geq 92}$.

Answer 42PA.

The objective is to find the marks that Carmen needs to obtain so that she scores A grade.

Consider “s” as the fourth test score for Carmen. At least 92 should be scored to get A grade. The scores on three math tests were given were 91, 95 and 88.

This can be expressed as following inequality

$$\frac{91+95+88+s}{4} \geq 92$$

Simplify the above inequality by multiplying with 4 on both sides

$$\frac{91+95+88+s}{4} \geq 92$$

$$\frac{91+95+88+s}{\cancel{4}} \times \cancel{4} \geq 92 \times 4 \quad \text{Sum all the three test marks}$$

$$274+s \geq 368$$

Further simplify the above inequality by subtracting 274 on both sides

$$274+s \geq 368$$

$$274+s-274 \geq 368-274$$

$$s \geq 94$$

Therefore, the solution set represents as $\boxed{\{s \mid s \geq 94\}}$.

Hence, Carmen has to score at least 94 marks in fourth test so that she obtains A grade.

Answer 43PA.

The objective is to find write the inequality for the temperature of mercury in Fahrenheit in which it is in solid state.

The melting/freezing point temperature of mercury is $-39°C$

If the temperature is less than or equal to $-39°C$, the mercury will be in solid form.

The relation between degree Celsius and Fahrenheit is given as

$$C = \frac{5(F-32)}{9}$$

Here the mercury freezing point temperature can be expressed in inequality form as

$$\boxed{-39 \geq \frac{5(F-32)}{9}}$$

Answer 44PA.

The objective is to find at what temperature of mercury in Fahrenheit will be in solid state.

The melting/freezing point temperature of mercury is $-39°C$

If the temperature is less than or equal to $-39°C$, the mercury will be in solid form.

The relation between degree Celsius and Fahrenheit is given as

$$C = \frac{5(F-32)}{9}$$

Here the mercury freezing point temperature can be expressed in inequality form as

$$-39 \geq \frac{5(F-32)}{9}$$

Simplify the above inequality by multiplying with 5 on both sides

$$-39 \geq \frac{5(F-32)}{9}$$

$$-39 \times 9 \geq \frac{5(F-32)}{\cancel{9}} \times \cancel{9}$$ Expand the bracketed terms

$$-351 \geq 5F - 160$$

Further simplify the above inequality by adding 160 on both sides

$$-351 \geq 5F - 160$$
$$-351 + 160 \geq 5F - 160 + 160$$
$$-191 \geq 5F$$

Simplify the above relation by dividing 5 on both sides.

$$-191 \geq 5F$$
$$\frac{-191}{5} \geq \frac{5F}{5}$$
$$-38.2 \geq F$$
$$F \leq -38.2$$

Therefore, the solution set represents as $\boxed{\{F \mid F \leq -38.2\}}$.

Therefore, at -38.2 degree Fahrenheit and below the mercury is in solid form.

Answer 45PA.

The objective is to find how much time Keith has to diet to reach his goal weight.

Consider the time taken for Keith is n. The current weight of Keith is 200 pounds. His target is to reduce his weight below 175 pounds by 2 pounds every week.

This can be expressed in inequality form as

$$200-2n<175$$

Simplify the above inequality by subtracting 200 on both sides

$$\begin{aligned}&200-2n<175\\&200-2n-200<175-200\\&-2n<-25\end{aligned}$$

Whenever a true inequality is multiplied or divided by the same negative number, the direction of the inequality symbol should be reversed.

Simplify the inequality by dividing both sides by -2 and change the inequality symbol.

$$\begin{aligned}&-2n<-25\\&\frac{-2n}{-2}>\frac{-25}{-2}\\&n>12.5\end{aligned}$$

Therefore, the solution set represents as $\boxed{\{n \mid n>12.5\}}$.

Hence, Keith has to diet more than 12.5 weeks to meet his weight reduction target.

Answer 46PA.

The objective is come upon with a multi-step inequality that has no solution or has infinitely many solutions.

Consider the following inequality

$$3y+4>2(y+3)+y$$

The grouped numbers can be simplified by using distributed property.

$$\begin{aligned}&3y+4>2(y+3)+y\\&3y+4>2y+6+y\end{aligned}$$

Combine the like terms

$$\begin{aligned}&3y+4>2y+6+y\\&3y+4>3y+6\end{aligned}$$

Simplify the above inequality by subtracting 3y both sides

$$3y+4>3y+6$$
$$3y+4-3y>3y+6-3y$$
$$4 \not> 6$$

This inequality cannot be solved, as the y terms get cancelled and the existing number doesn't satisfy the inequality. The solution set is empty set.

Hence, no solution exits.

Simplify the above inequality by subtracting 3b both sides

$$9-3b<31-3b$$
$$9-3b+3b<31-3b+3b$$
$$9<31$$

This statement is true. This inequality eliminates b terms. The solution set is empty set.

Hence, this inequality has infinitely many solutions.

Answer 47PA.

The objective is to find how many toppings Nicholas can order with the money he had.

Consider each topping he can buy as n. Each pizza costs $7.50 and $1.25 per toppings. The total amount Nicholas has is $13 that he can spend for Pizza order. He plans 15% tip of the total cost.

This can be expressed in inequality form as

$$7.5+1.25n+0.15(7.5+1.25n)\le 13$$

The grouped numbers can be simplified by using distributed property.

$$7.5+1.25n+0.15(7.5+1.25n)\le 13$$
$$7.5+1.25n+1.125+0.01875n\le 13$$

Combine the like terms

$$7.5+1.25n+1.125+0.01875n\le 13$$
$$8.625+1.26857n\le 13$$

Simplify the above inequality by subtracting 8.625 on both sides

$$8.625 + 1.26857n \le 13$$
$$8.625 + 1.26857n - 8.625 \le 13 - 8.625$$
$$1.26857n \le 4.375$$

Simplify the inequality by dividing both sides by 1.26857.

$$1.26857n \le 4.375$$
$$\frac{1.26857n}{1.26857} \le \frac{4.375}{1.26857}$$
$$n \le 3.45$$

Therefore, the solution set represents as $\boxed{\{n \mid n \le 3.45\}}$.

Hence, Nicholas can order 3 toppings with the amount he had along with Pizza.

Answer 48PA.

The objective is to find how many weeks can the workers strike and still make money as her are not in strike

Per week salary of a union worker is \$500.

Hence, the amount earned by the salary worker in a year is

$$\$500 \times 52 = \$26,000$$

The amount of raise in salary provided is 4%.

So, the amount of salary hike got for the worker is

$$\$500 \times 0.04 = \$20$$

Hence the new salary for the worker is

$$\$500 + \$20 = \$520$$

Consider the number of weeks that required for earning with increased salary is n.

The number of weeks can be obtained by multiplying new salary with n and subtracting with 52.

This can be expressed in inequality form as

$$520n \ge 26,000$$

Simplify the above inequality by dividing 520 on both sides

$$520n \geq 26,000$$
$$\frac{520n}{520} \geq \frac{26,000}{520}$$
$$n \geq 50$$

Therefore, the solution set represents as $\{n \mid n \geq 50\}$.

Here the number of weeks he can strike and still makes $26,000 is

$$52 - 50 = 2$$
$$\boxed{2 \text{ weeks}}$$

Hence, the union workers can still strike for 2 weeks

Answer 49PA.

The objective is to find how many weeks can the workers strike and still make money as her are not in strike

Per week salary of a union worker is $600.

Hence, the amount earned by the salary worker in a year is

$$\$600 \times 52 = \$31,200$$

The amount of raise in salary provided is 4%.

So, the amount of salary hike got for the worker is

$$\$600 \times 0.04 = \$24$$

Hence the new salary for the worker is

$$\$600 + \$24 = \$624$$

Consider the number of weeks that required for earning with increased salary is n.

The number of weeks can be obtained by multiplying new salary with n and subtracting with 52.

This can be expressed in inequality form as

$$624n \geq 31,200$$

Simplify the above inequality by dividing 624 on both sides

$$624n \geq 31,200$$
$$\frac{624n}{624} \geq \frac{31,200}{624}$$
$$n \geq 50$$

Therefore, the solution set represents as $\{n \mid n \geq 50\}$.

Here the number of weeks he can strike and still makes $31,200 is

$$52 - 50 = 2$$
$$\boxed{2 \text{ weeks}}$$

Hence, the union workers can still strike for 2 weeks

Answer 51PA.

The objective is to find the solution of two consecutive positive odd integers, who sum is no greater than (less than or equal to) 18.

Consider n as the positive odd integer.

The next positive odd integer will be n+2.

The given statement can be expressed as the following inequality.

$$n+(n+2)\le 18$$

Simplify the given inequality by combing the like terms

$$2n+2\le 18$$

Further simply by subtracting 2 on both sides

$$2n+2-2\le 18-2$$
$$2n\le 16$$

Simplify the above inequality by dividing 2 on both sides

$$2n\le 16$$
$$\frac{2n}{2}\le\frac{16}{2}$$
$$n\le 8$$

Therefore, the solution set represents as $\boxed{\{n\,|\,n\le 8\}}$.

Hence, the solution set for two consecutive positive odd integers, who sum is no greater than 18 is $\{n\,|\,n\le 8\}$.

Answer 52PA.

The objective is to find the solution of three consecutive positive even integers, who sum is less than 40.

Consider n as the positive even integer.

The next two positive odd integers will be n+2, n+4.

The given statement can be expressed as the following inequality.

$$n+(n+2)+(n+4)<40$$

Simplify the given inequality by combing the like terms

$$n+(n+2)+(n+4)<40$$
$$3n+6<40$$

Further simply by subtracting 6 on both sides

$$3n+6<40$$
$$3n+6-6<40-6$$
$$3n<34$$

Simplify the above inequality by dividing 3 on both sides

$$3n<34$$
$$\frac{3n}{3}<\frac{34}{3}$$
$$n<11.34$$

Therefore, the solution set represents as $\boxed{\{n \mid n<11.34\}}$.

Hence, the solution of three consecutive positive even integers, who sum is less than 40 is $\{n \mid n<11.34\}$.

Answer 53PA.

Inequalities provide us more insight into the physics. It tells us at what temperatures the materials changes its properties.

Consider an example of Bromine. The boiling point of Bromine is 137.84F.

The objective is to find at what temperature of Bromine in Celsius will be in gaseous state.

If the temperature is greater than $138°F$, Bromine will be in gaseous form.

The relation between degree Celsius and Fahrenheit is given as

$$F=\frac{9}{5}C+32$$

Here the mercury freezing point temperature can be expressed in inequality form as

$$\frac{9}{5}C+32>138$$

Simplify the above inequality by adding 32 on both sides

$$\frac{9}{5}C+32>138$$
$$\frac{9}{5}C+32-32>138-32$$
$$\frac{9}{5}C>106$$

Further simplify the above relation by multiplying 5/9 on both sides.

$$\frac{9}{5}C > 106$$
$$\frac{\cancel{9}}{\cancel{5}}C \times \frac{\cancel{5}}{\cancel{9}} > \overset{11.78}{10\cancel{6}} \times \frac{5}{\cancel{9}}$$
$$C > 58.8$$

Therefore, the solution set represents as $\boxed{\{C \mid C > 58.8\}}$.

Therefore, at 58.8 degree Celsius and below Bromine is in gaseous form.

Answer 54PA.

The objective is to define the first step of the given inequality.

The original inequality given is

$$\frac{y-5}{9} \geq 13$$

Expand the given inequality based on distributive property.

Simplifying the given equation by multiplying 9 on both sides

$$\frac{y-5}{9} \geq 13$$
$$\frac{y-5}{9} \times 9 \geq 13 \times 9$$

Hence, first step is **Multiply each side by 9**.

This matches with D, Hence answer is $\boxed{D}$.

Answer 55PA.

Consider the following inequality

$$4t + 2 < 8t - (6t - 10)$$

The objective is to solve the inequality.

The grouped numbers can be simplified by using distributed property and combine the like terms.

$$4t + 2 < 8t - (6t - 10)$$
$$4t + 2 < 8t - 6t + 10$$
$$4t + 2 < 2t + 10$$

Simplify the above inequality by subtracting 2t both sides

$$4t+2<2t+10$$
$$4t+2-2t<2t+10-2t$$
$$2t+2<10$$

Now further simplify by subtracting 2 on both side

$$2t+2<10$$
$$2t+2-2<10-2$$
$$2t<8$$

Simplify the inequality by dividing both sides by 2.

$$2t<8$$
$$\frac{\cancel{2}t}{\cancel{2}}<\frac{8}{2}$$
$$t<4$$

Therefore, the solution set represents as $\boxed{\{t \mid t<4\}}$.

This matches with the option C.

Hence, answer is $\boxed{C}$.

Answer 59MYS.

The objective is to find how many miles Mrs Ludlow can travel with the budget she has.

Consider 'r' as the number of miles.

The total amount Mrs Ludlow has is \$50. The charges per mile is \$0.12

The number of miles travelled is obtained by multiplying r with per mile which should be less \$50.

This can be expressed as following inequality

$$r \times 0.12 < \$50$$

Answer 60MYS.

Consider the following inequality:

$$d+13 \geq 22$$

The objective is to the solve the inequality and graph it on the number line.

Simply the given expression

Subtract 13 on both sides

$$d+13 \geq 22$$
$$d+13-13 \geq 22-13$$
$$d \geq 9$$

Therefore the solution set is represented as $\boxed{\{d \mid d \geq 9\}}$

In order to check the solution consider $d = 9$

Substitute $d = 9$ in the given inequality

$d + 13 \geq 22$

$9 + 13 \geq 22$

$22 \geq 22$

The value of $d = 9$ satisfies the given inequality.

In order to check the solution consider $d = 5$

Substitute $d = 5$ in the given inequality

$d + 13 \geq 22$

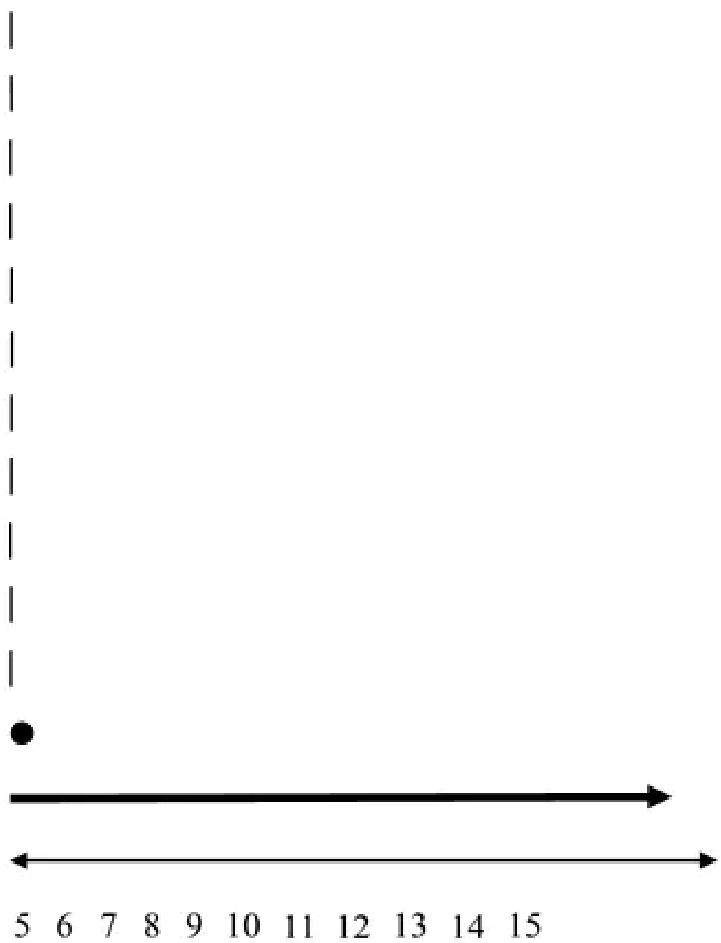
$5 + 13 \geq 22$

$18 \not\geq 22$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{d \mid d \geq 9\}$.

The inequality can be represented in the graph with the doted circle and heavy arrow mark right to the number 9.



Answer 61MYS.

Consider the following inequality:

$t-5<3$

The objective is to the solve the inequality and graph it on the number line.

Simply the given expression

Add 5 on both sides

$$t-5<3$$
$$t-5+5<3+5$$
$$t<8$$

Therefore the solution set is represented as $\boxed{\{t \mid t<8\}}$

In order to check the solution consider $t=7$

Substitute $t=7$ in the given inequality

$$t-5<3$$
$$7-5<3$$
$$2<3$$

The value of $t=7$ satisfies the given inequality.

In order to check the solution consider $t=9$

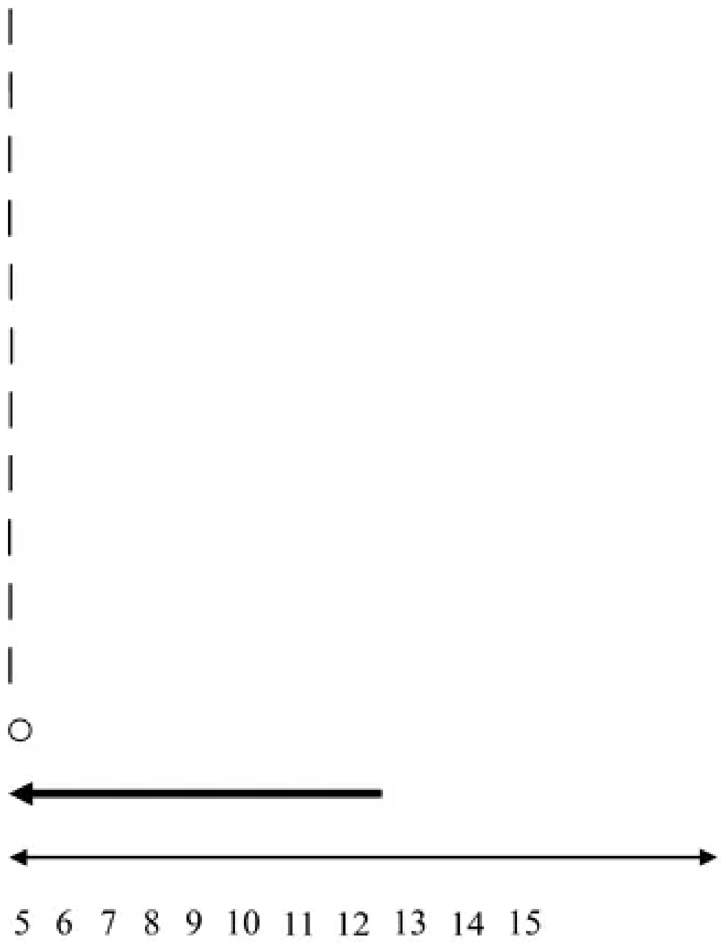
Substitute $t=9$ in the given inequality

$$t-5<3$$
$$9-5<3$$
$$4 \not< 3$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{t \mid t<8\}$.

The inequality can be represented in the graph with the open circle and heavy arrow mark left to the number 8.



Answer 62MYS.

Consider the following inequality:

$$4 > y + 7$$

The objective is to the solve the inequality and graph it on the number line.

Simply the given expression

Subtract 7 on both sides

$$4 > y + 7$$
$$4 - 7 > y + 7 - 7$$
$$-3 > y$$
$$y < -3$$

Therefore the solution set is represented as $\boxed{\{y \mid y < -3\}}$

In order to check the solution consider $y = -5$

Substitute $y = -5$ in the given inequality

$$4 > y + 7$$
$$4 > -5 + 7$$
$$4 > 2$$

The value of $y = -5$ satisfies the given inequality.

In order to check the solution consider $y=-2$

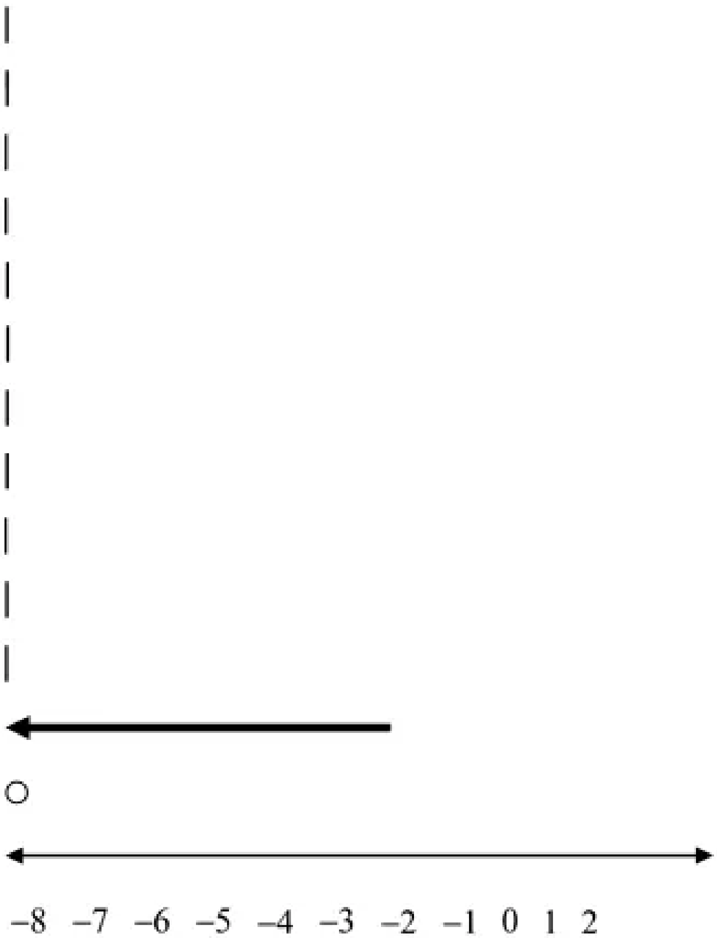
Substitute $y=-2$ in the given inequality

$$4 > y+7$$
$$4 > -2+7$$
$$4 \not> 5$$

This doesn't satisfy the given inequality.

Hence, always the solution set is represented as $\{y \mid y < -3\}$.

The inequality can be represented in the graph with the open circle and heavy arrow mark left to the number -3.



Answer 63MYS.

The objective is to write the equation in slope-intercept form the passes through the given point.

The equation of line representing the slope intercept form is

$y = mx + c$ Where m is the slope of the line

For a parallel line the slope remains same.

So from the given equation the slope can be obtained, use the slope and a line that passes through the point will provide us a parallel line.

Answer 64MYS.

The objective is to write the equation in slope-intercept form the passes through the given point.

The equation of line representing the slope intercept form is

$y = mx + c$ Where m is the slope of the line

For a parallel line the slope remains same.

So from the given equation the slope can be obtained, use the slope and a line that passes through the point will provide us a parallel line.

The equation of a line that passes through a point (x_1, y_1) and having slope m is expressed as

$$y - y_1 = m(x - x_1)$$

Here $m = -\frac{2}{3}, (x_1, y_1) = (-2, -1)$

On substitution

$$\begin{aligned} y - (-1) &= -\frac{2}{3}(x - (-2)) \\ 3(y+1) &= -2(x+2) \\ 3y + 3 &= -2x - 4 \\ 3y &= -2x - 4 - 3 \\ 3y &= -2x - 7 \end{aligned}$$

Simplify by cross multiplication.

Writing in point slope form is

$$\begin{aligned} 3y &= -2x - 7 \\ y &= -\frac{2x+7}{3} \end{aligned}$$

Therefore, the equation of the line is $\boxed{y = -\frac{2x+7}{3}}$.

Answer 65MYS.

The objective is to write the equation in slope-intercept form the passes through the given point.

The equation of line representing the slope intercept form is

$y = mx + c$ Where m is the slope of the line

For a parallel line the slope remains same.

So from the given equation the slope can be obtained, use the slope and a line that passes through the point will provide us a parallel line.

The equation of a line that passes through a point (x_1, y_1) and having slope m is expressed as

$$y - y_1 = m(x - x_1)$$

Here $m = 0, (x_1, y_1) = (3, 6)$

On substitution

$$y - (6) = 0(x - 3)$$
$$y - 6 = 0$$
$$y = 6$$

Therefore, the equation of the line is $\boxed{y = 6}$.

Answer 66MYS.

The objective is to find the slope of the line that passes through the given points.

In order to find the equation of the line, first we need to calculate the slope of the line.

That is expressed using the formula

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

The given points are

$$(x_1, y_1) = (3, -1)$$
$$(x_2, y_2) = (4, -6)$$

Substitute the values to obtain the slope

$$\begin{aligned} m &= \frac{y_2 - y_1}{x_2 - x_1} \\ &= \frac{-6 - (-1)}{4 - 3} \\ &= \frac{-5}{1} \\ &= -5 \end{aligned}$$

Therefore, the slope of the line that passes through the given points $\boxed{m = -5}$.

Answer 67MYS.

The objective is to find the slope of the line that passes through the given points.

In order to find the equation of the line, first we need to calculate the slope of the line.

That is expressed using the formula

$$m=\frac{y_2-y_1}{x_2-x_1}$$

The given points are

$$\left(x_{1,}y_1\right)=(3,-1)$$
$$\left(x_{2,}y_2\right)=(4,-6)$$

Substitute the values to obtain the slope

$$\begin{aligned}m&=\frac{y_2-y_1}{x_2-x_1}\\&=\frac{-6-(-1)}{4-3}\\&=\frac{-5}{1}\\&=-5\end{aligned}$$

Therefore, the slope of the line that passes through the given points $\boxed{m=-5}$.

Answer 68MYS.

The objective is to find the slope of the line that passes through the given points.

In order to find the equation of the line, first we need to calculate the slope of the line.

That is expressed using the formula

$$m=\frac{y_2-y_1}{x_2-x_1}$$

The given points are

$$\left(x_{1,}y_1\right)=(0,3)$$
$$\left(x_{2,}y_2\right)=(-2,-5)$$

Substitute the values to obtain the slope

$$\begin{aligned}m&=\frac{y_2-y_1}{x_2-x_1}\\&=\frac{-5-3}{-2-0}\\&=\frac{-8}{-2}\\&=4\end{aligned}$$

Therefore, the slope of the line that passes through the given points $\boxed{m=4}$.

Answer 69MYS.

The objective is to write the given equation in linear form.

The equation must be written in $Ax + By = C$

The given equation is

$$4x = 7 + 2y$$

Simplify the given equation by subtracting 2y on both sides

$$4x - 2y = 7 + 2y - 2y$$
$$4x - 2y = 7$$

Therefore, the equation can be written as $\boxed{4x - 2y = 7}$.

Answer 70MYS.

The objective is to write the given equation in linear form.

The equation must be written in $Ax + By = C$

The given equation is

$$2x^2 - y = 7$$

This equation cannot be mentioned in a point slope form, since it is a quadratic equation.

Therefore, the given equation cannot be written in linear equation form.

Answer 71MYS.

The objective is to write the given equation in linear form.

The equation must be written in $Ax + By = C$

The given equation is

$$x = 12$$

The above equation y term is zero.

Representing the given equation with each terms as

$$A = 1$$
$$B = 0$$
$$C = 12$$

Therefore, the equation can be written as $\boxed{x = 12}$.

Answer 72MYS.

Consider the following equation

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

The objective is to solve the equation.

Simplify the given equation by taking "x" terms on one side and numbers on other side.

$$2(x-2)=3x-(4x-5)$$
$$2x-4=3x-4x+5$$
$$2x-3x+4x=5+4$$
$$3x=9$$

Now divide both sides with 3 in order to calculate the value of x.

$$3x=9$$
$$\frac{\cancel{3}x}{\cancel{3}}=\frac{\overset{3}{\cancel{9}}}{\cancel{3}}$$
$$x=3$$

Therefore, the solution of the given equation is $\boxed{x=3}$.

Answer 73MYS.

Consider the following equation

$$5t-7=t+3$$

The objective is to solve the equation.

Simplify the given equation by taking "t" terms on one side and numbers on other side.

$$5t-7=t+3$$
$$5t-t=3+7$$
$$4t=10$$

Now divide both sides with 4 in order to obtain the value of t.

$$4t=10$$
$$\frac{\cancel{4}t}{\cancel{4}}=\frac{10}{4}$$
$$t=\frac{5}{2}$$
$$t=2.5$$

Therefore, the solution of the given equation is $\boxed{t=2.5}$.

In order to check the solution consider $t = 2.5$

Substitute $t = 2.5$ in the given inequality

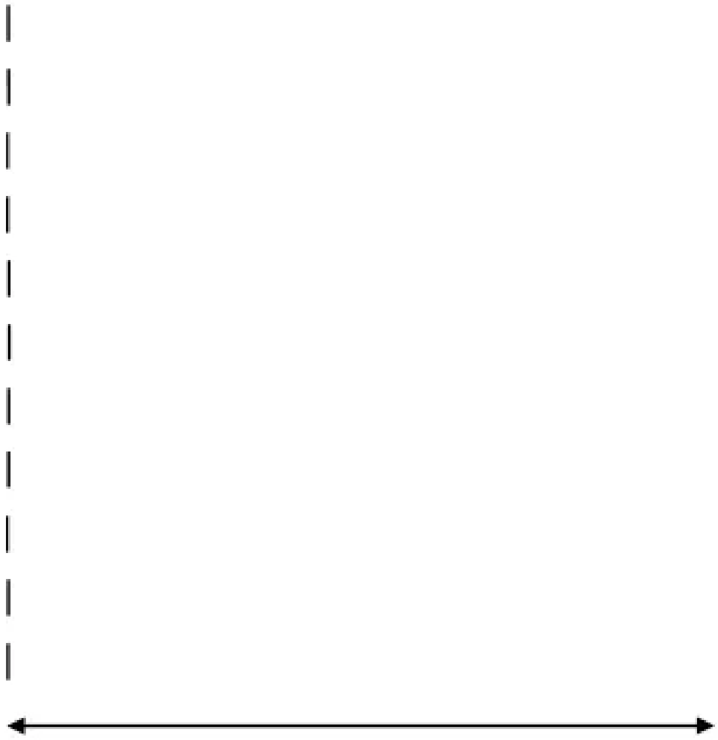
$$5t - 7 = t + 3$$
$$5 \times 2.5 - 7 = 2.5 + 3$$
$$12.5 - 7 = 5.5$$
$$5.5 = 5.5$$

Therefore, the value of $t = 2.5$ satisfies the given inequality.

Answer 74MYS.

The objective is to graph the set of numbers on the number line.

Consider the following number line



$-5 \quad -4 \quad -3 \quad -2 \quad -1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5$

Given set is $\{-2, 3, 5\}$

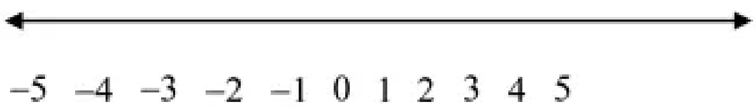
Identify the number on the number line and circle them.

Hence, the given set is represented as shown below.

Answer 75MYS.

The objective is to graph the set of numbers on the number line.

Consider the following number line



Given set is $\{-1,0,3,4\}$

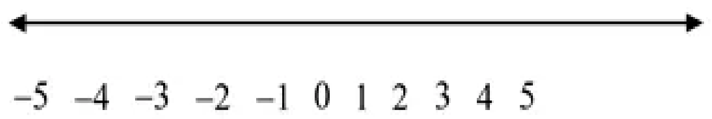
Identify the number on the number line and circle them.

Hence, the given set is represented as shown below.

Answer 76MYS.

The objective is to graph the set of numbers on the number line.

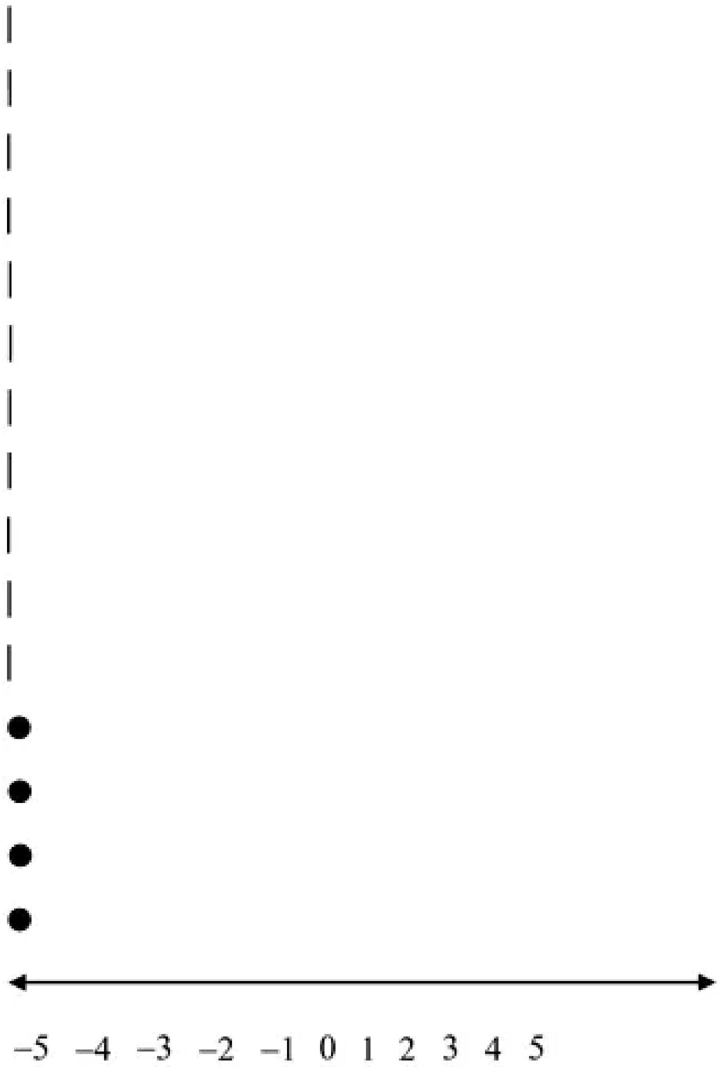
Consider the following number line



Given set is $\{-5,-4,-1,1\}$

Identify the number on the number line and circle them.

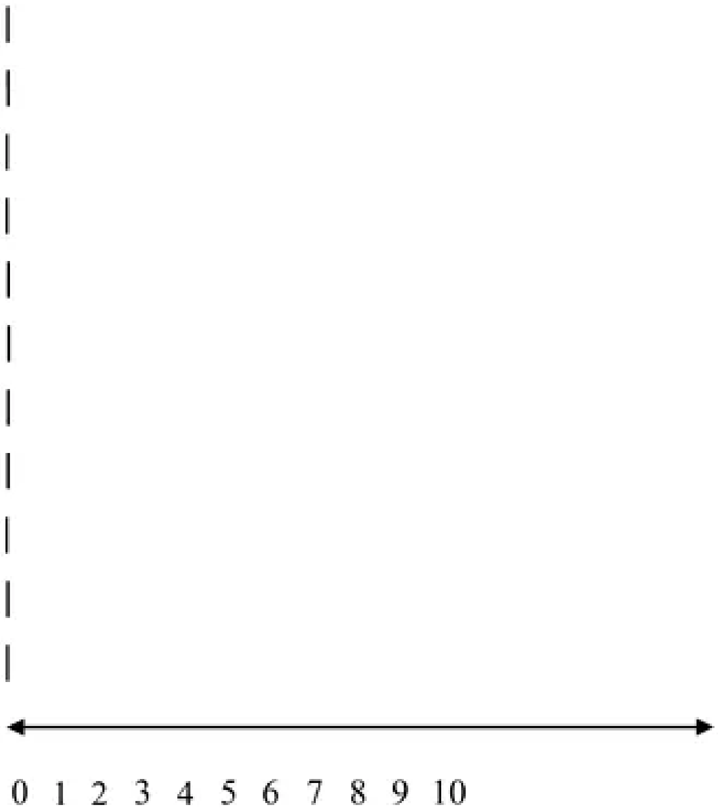
Hence, the given set is represented as shown below.


−5 −4 −3 −2 −1 0 1 2 3 4 5

Answer 77MYS.

The objective is to graph the set of numbers on the number line.

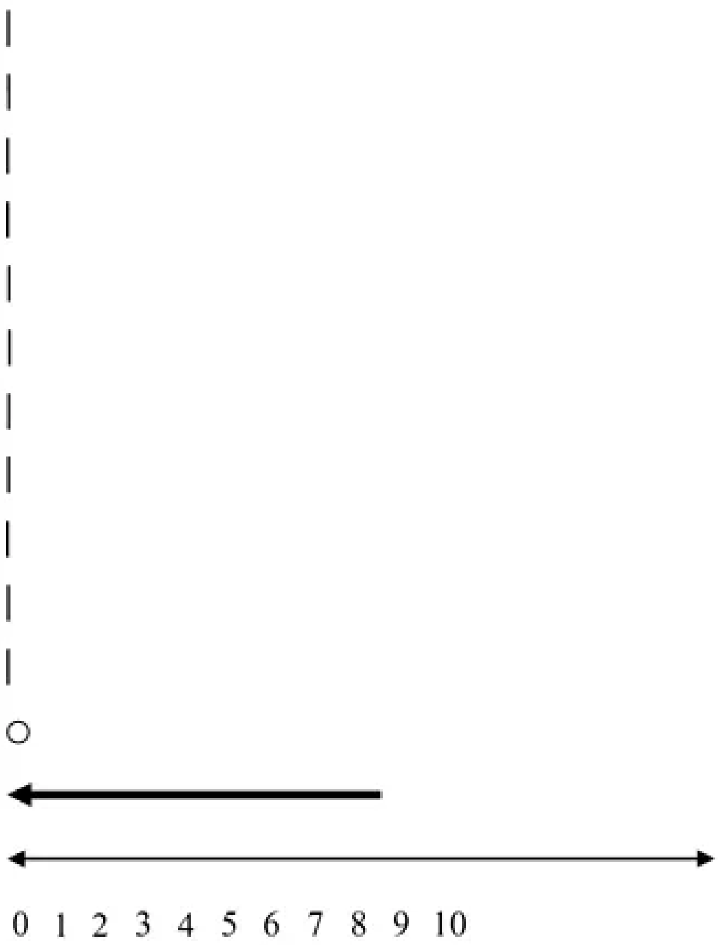
Consider the following number line.



Given set is $\{\text{integers less than } 5\}$

Identify the number 5 on the number line and draw a thick arrow mark towards left of it, which represented all the values are not included in it. Open circle represents 5 is not included.

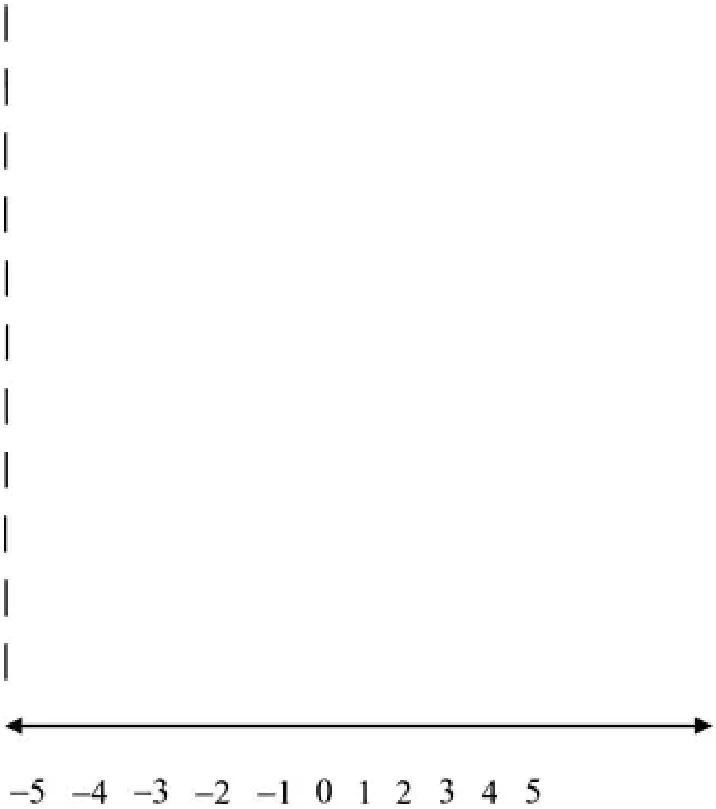
Hence, the given set is represented on the number line shown below.



Answer 78MYS.

The objective is to graph the set of numbers on the number line.

Consider the following number line



Given set is $\{\text{integers greater than -2}\}$

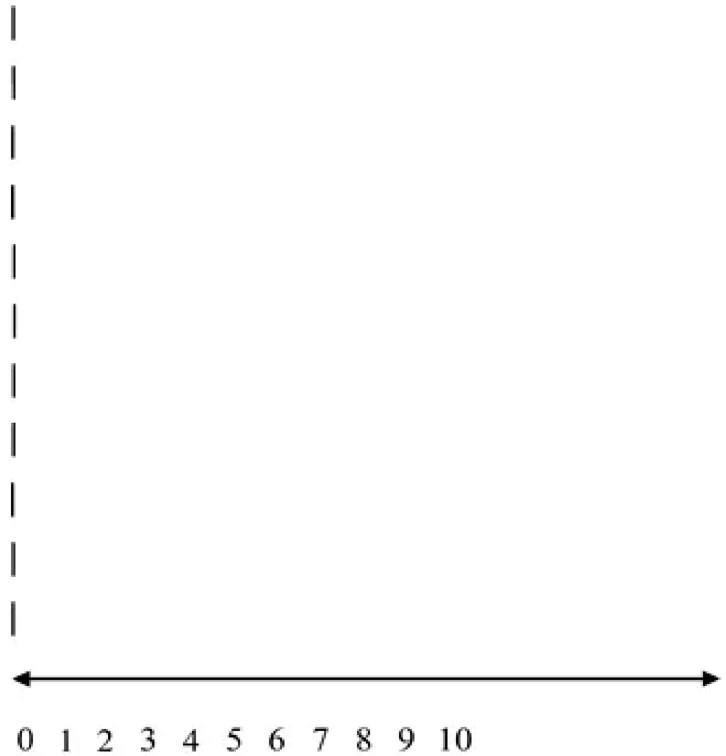
Identify the number -2 on the number line and draw a thick arrow mark towards right of it, which represented all the values are not included in it. Open circle represents -2 is not included.

Hence, the given set is represented on the number line shown below.

Answer 79MYS.

The objective is to graph the set of numbers on the number line.

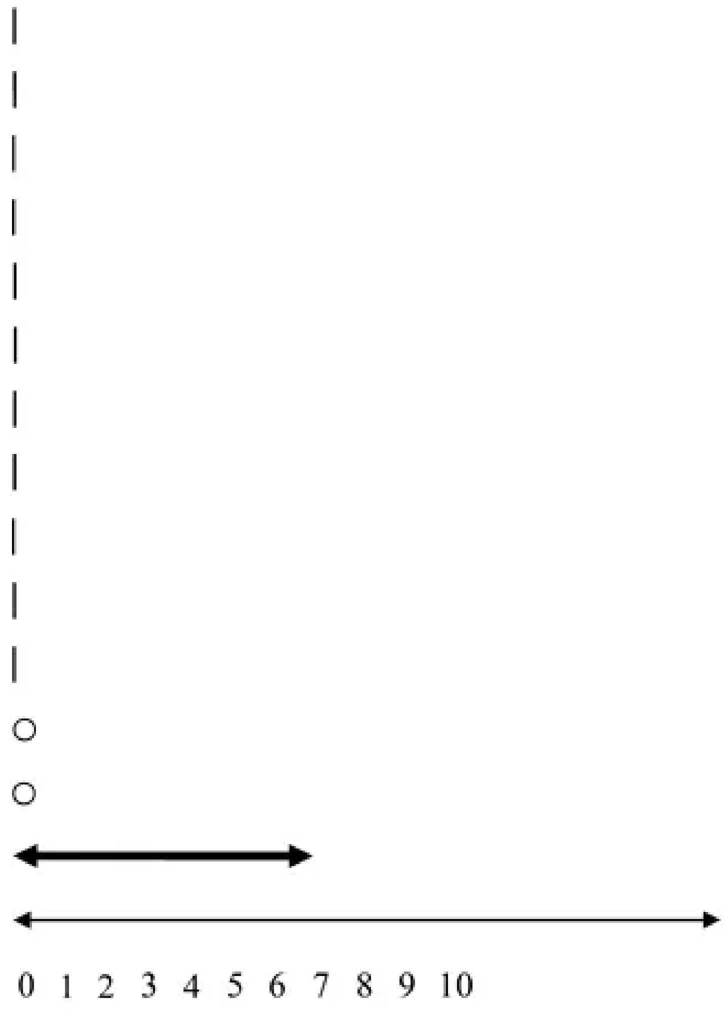
Consider the following number line.



Given set is $\{\text{integers between 1 and 6}\}$

Identify the numbers 1 and 6 on the number line and draw a thick arrow mark between them. Open circle represents 1 and 6 are not included.

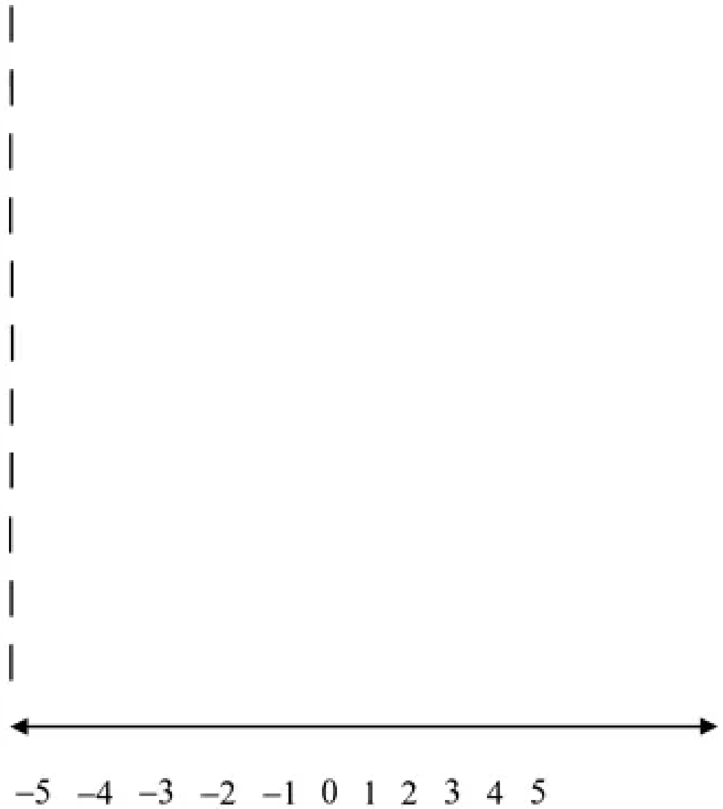
Hence, the given set is represented on the number line shown below.



Answer 80MYS.

The objective is to graph the set of numbers on the number line.

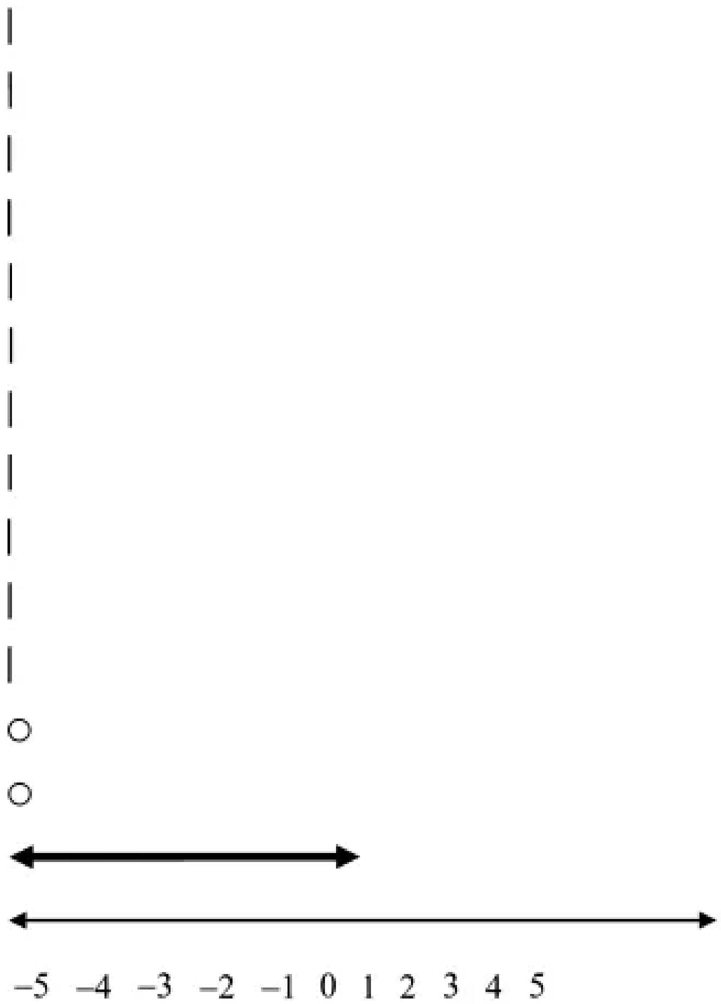
Consider the following number line



Given set is {integers between -4 and -2}

Identify the numbers -4 and 2 on the number line and draw a thick arrow mark between them. Open circle represents -4 and 2 are not included.

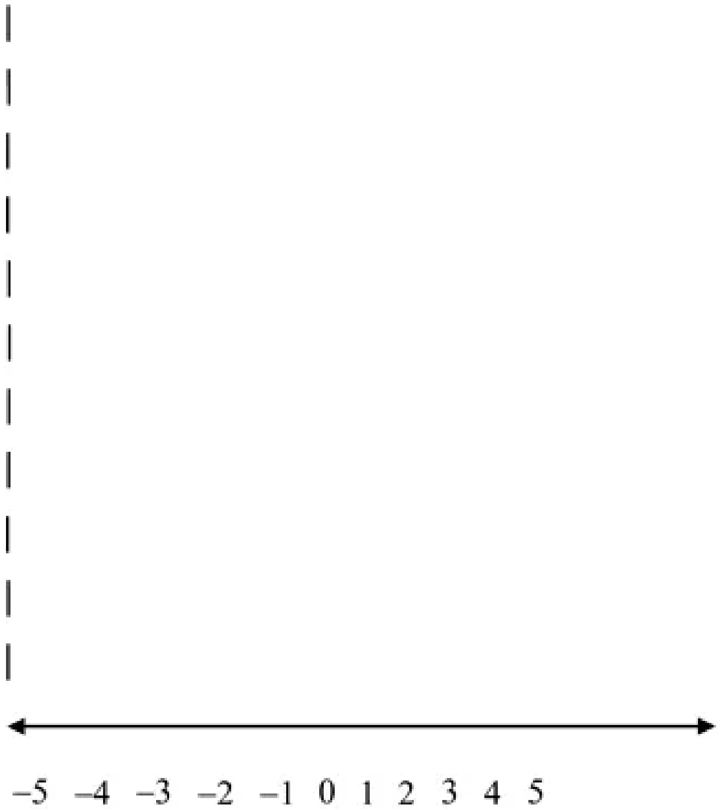
Hence, the given set is represented on the number line shown below.



Answer 81MYS.

The objective is to graph the set of numbers on the number line.

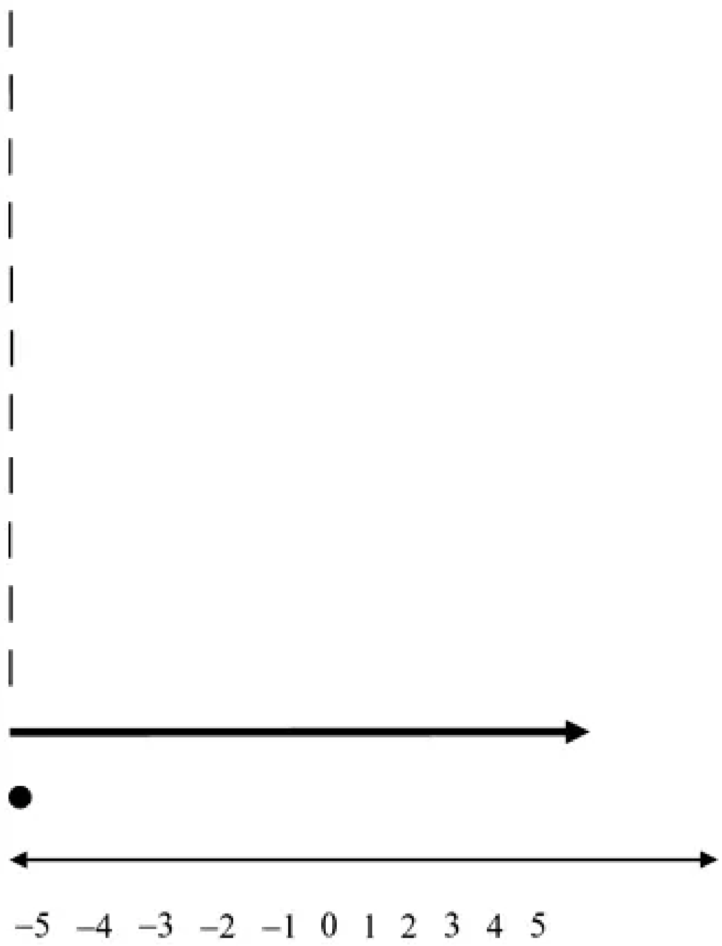
Consider the following number line



Given set is $\{\text{integers greater than equal to -4}\}$

Identify the number -4 on the number line and draw a thick towards right it. Dotted circle represents -4 is included.

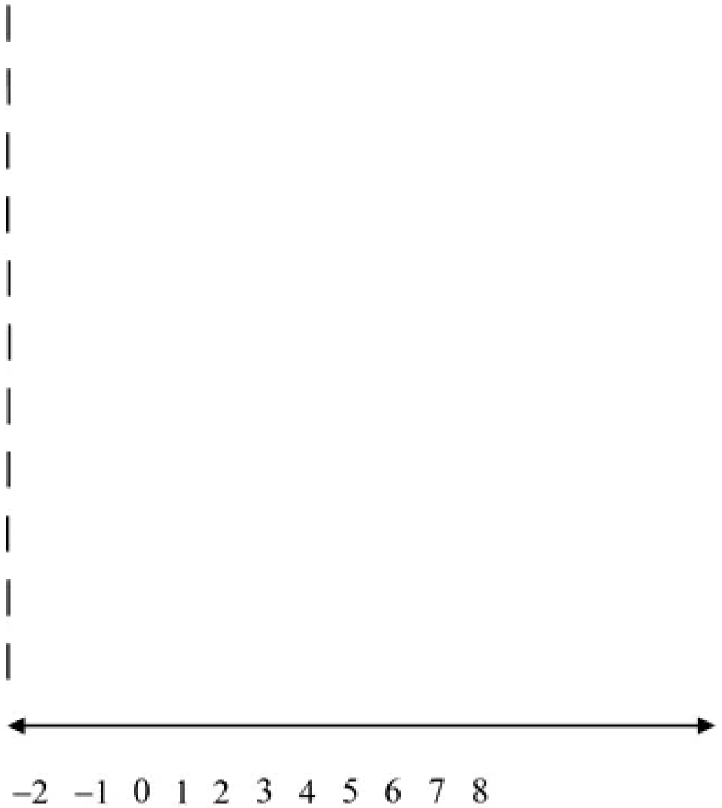
Hence, the given set is represented on the number line shown below.


−5 −4 −3 −2 −1 0 1 2 3 4 5

Answer 82MYS.

The objective is to graph the set of numbers on the number line.

Consider the following number line



Given set is $\{\text{integers less than 6 but greater than -1}\}$

Identify the numbers -1 and 6 on the number line and draw a thick arrow mark between them. Open circle represents -1 and 6 are not included.

Hence, the given set is represented on the number line shown below.