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# Bell Ringer - Solve the equation.

$$\frac{2}{3}(x - 9) = 3\frac{1}{3}$$

$$\frac{2}{3}(x-9) = \frac{10}{3}$$

$$\frac{3}{2}\cdot\frac{2}{3}(x-9) = \frac{5}{1}\frac{10}{3}\cdot\frac{3}{2}\frac{1}{1}$$

$$x - 9 = 5$$

$$x = 14$$

# Inequality Notes

Inequality - a mathematical sentence that compares quantities that are not equal.

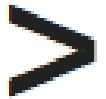
Inequalities contain these symbols:

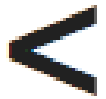
- $>$ means greater than
- $<$ means less than
- $\geq$ means greater than or equal to
- $\leq$ means less than or equal to

Inequalities are graphed on a number line using a circle and shading.

1) Plot the key point on a number line.
2) Decide open circle ( $>$ and $<$ ) or closed circle ( $\geq$ and $\leq$ ).
3) Shade the line to the left or right from the point.

Move the phrases to match the inequality symbol.





is no less than

is greater than

is greater than or equal to

is less than

is less than or equal to

is at least

is more than

exceeds

is fewer than

is no more than

is at most

Move the phrases to match the inequality symbol.

| $>$ | $<$ | $\geq$ | $\leq$ |
| --- | --- | --- | --- |
| is greater than | is less than | is greater than or equal to | is less than or equal to |
| exceeds | is fewer than | is at least | is at most |
| is more than | | is no less than | is no more than |

# Inequality Problem Examples

For the given value, state whether the inequality is true or false.

1) $m - 3 < 4$ ; if $m = 6$

$6 - 3 < 4$

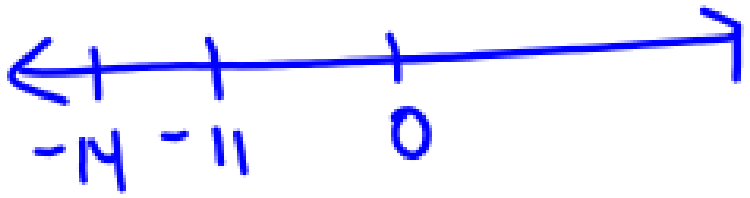
$3 < 4$ True

2) $-14 \leq \frac{a}{3} + 1$ ; if $a = -36$

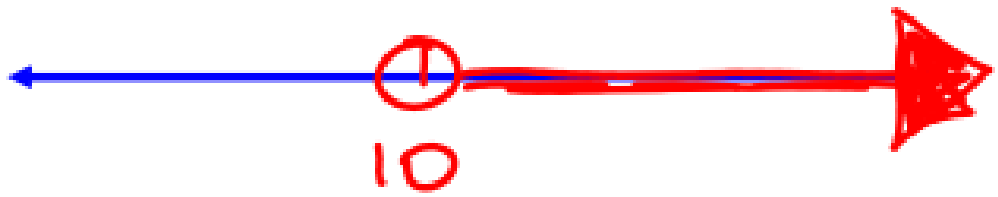
$-14 \leq \frac{-36}{3} + 1$

$-14 \leq -12 + 1$

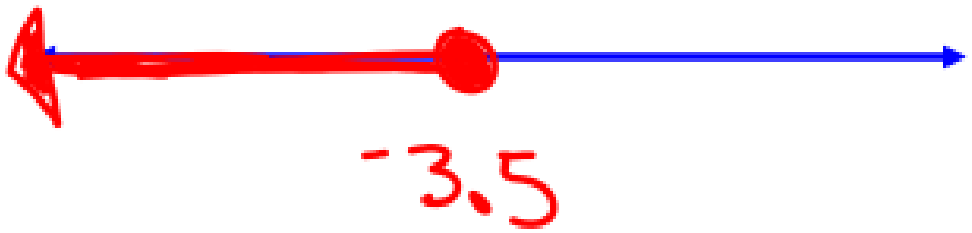
$-14 \leq -11$ True



3) Graph $x > 10$ on a number line.




4) Graph $n \leq -3.5$ on a number line.

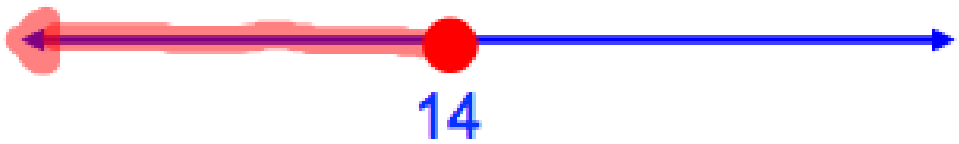


5) Write an inequality for the graph.


$x > -6$

$-6 < x$

6) Write an inequality for the graph.




$x \leq 14$

**Writing an Inequality Statement**

- Define the variable; Let n = the number
- Identify the inequality symbol to use
- Write the inequality using the variable and symbol

7) The temperature must be above 60 degrees.

t = temperature

$t > 60$

8) The planes were delayed at least 30 minutes

d = delay

$d \geq 30$

9) The answer must be 14 or less.

a = answer

$a \leq 14$

10) Your speed is at most 62 mph.

S = speed

$S \leq 62$