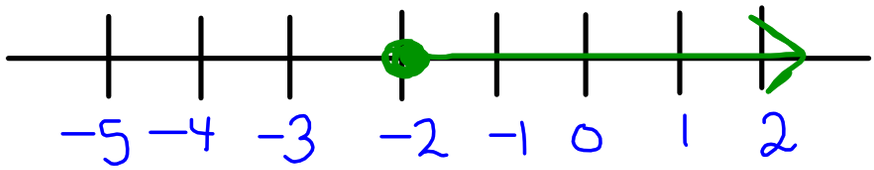
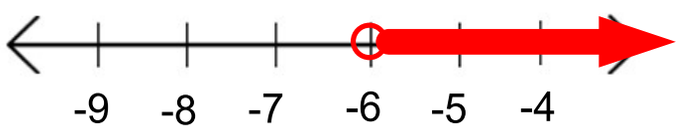
Warm Up

Graph the following

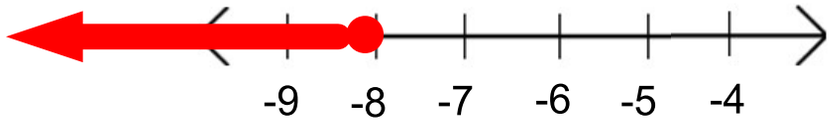
$-2 \leq t$ $\quad t \geq -2$



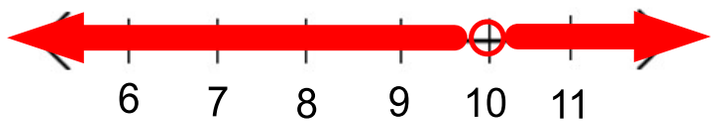
Write the inequality that represents the graphs



$x > -6$

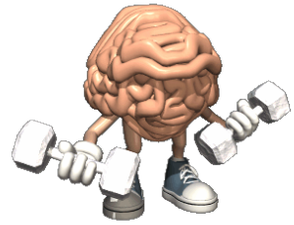


$x \leq -8$



$x \neq 10$

Warm-Up



1) $\frac{2}{3}(5 + 2r) = 4 - r$

$\frac{10}{3} + \frac{4r}{3} = 4 - r$ (multiply by 3)

$10 + 4r = 12 - 3r$ (+3r, +3r)

$10 + 7r = 12$ (−10)

$\frac{7r}{7} = \frac{2}{7}$

$r = \frac{2}{7}$

2) $3u + 6 - 5u = 17 + 4u - 6$

$-2u + 6 = 11 + 4u$ (+2u, +2u)

$6 = 11 + 6u$ (−11, −11)

$\frac{-5}{6} = \frac{6u}{6}$

$u = -\frac{5}{6}$

Any Questions ?????

Last Nights Homework

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Questions: 3(aceg), 4, 7(ac)

8,9, 11a,12,13(aceg)

Section 6.4: Solving linear Inequalities

Equations

$x + 6 = 10$ -6 -6

$x = 4$

Equations have one Answer

Verify

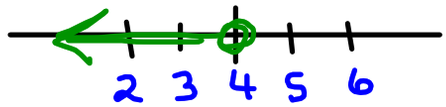
LH: $x + 6$, $4 + 6$, 10

RH: 10

Inequality

$x + 6 < 10$ -6 -6

$x < 4$



There are many solutions.

Verify

$x + 6 < 10$

$2 + 6$

$4 < 10$ ✓

$x + 6$

$0 + 6$

$6 < 10$

i) Solve the inequality

ii) Verify

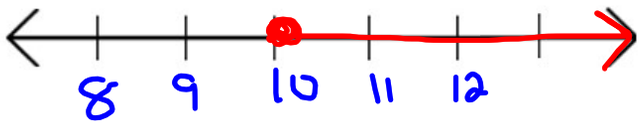
iii)Graph on a number line

Hint: Easier if you always solve for a positive variable

$6 \leq x - 4$ (+4 +4)

$10 \leq x$

$x \geq 10$



Verify

$6 \leq x - 4$

$6 \leq 6$ (10)

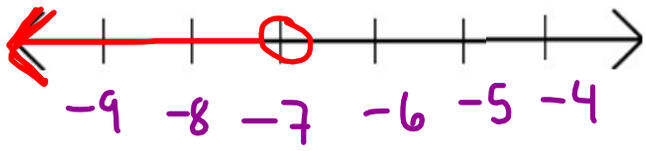
$6 \leq 8$ (12, $12 - 4$)

Try These!

2. $5 > m + 12$ (−12 −12)

$-7 > m$

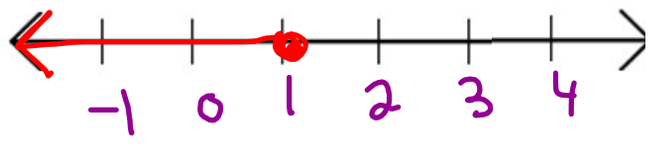
$m < -7$



Remember:
Always move the smaller variable

3. $-2y \leq -3y + 1$ (+3y +3y)

$y \leq 1$



Remember:

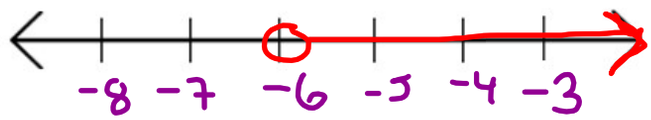
Always move the smaller variable

4. $-4y + 7 > -5y + 1$

$+5y$ $+5y$

$y + 7 > 1$ -7 -7

$y > -6$



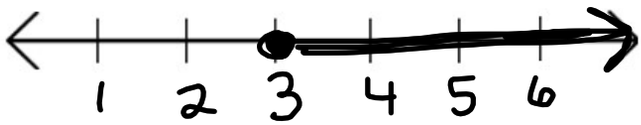
Graph the following and give 3 examples of solutions

$$\frac{2}{3}x + 4 \geq 6$$

$$2x + 12 \geq 18$$

$$\frac{2x}{2} \geq \frac{6}{2}$$

$$x \geq 3$$



$$\frac{x}{2}(6) + 3(6) \leq \frac{2x}{3}(6) - 4(6)$$

$-3x$ $-3x$

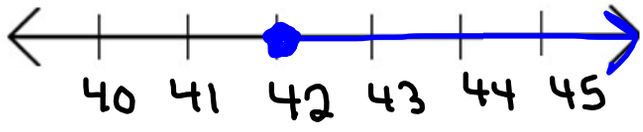
$3x + 18 \leq 4x - 24$

$+24$ $+24$

$18 \leq x - 24$

$42 \leq x$

$x \geq 42$



Match each inequality with the graph of its solution:

a) $x - 3 > 5$ (+3 +3)

$x > 8$

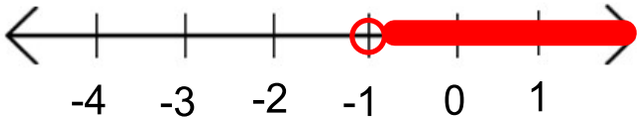
b) $-10 \geq -4 + p$ (+4 +4)

$-6 \geq p$

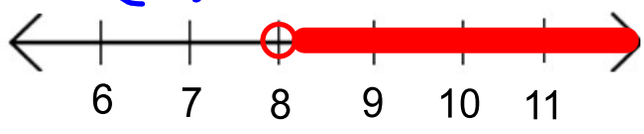
$p \leq -6$

c) $7 < r + 8$

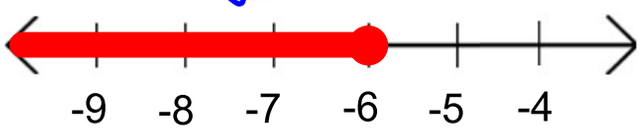
d) $-5 + w \leq -2$

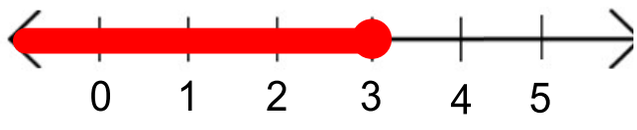


(a)



(b)





- Classwork / Homework:

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#6
#7