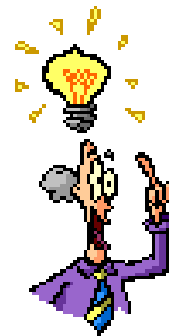


Any homework Questions?

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- 3 aceg 12
- 4 13aceg
- 6ac
- 7
- 8
- 9



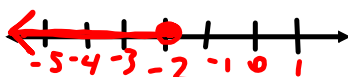
Name \_\_\_\_\_

**Quiz**

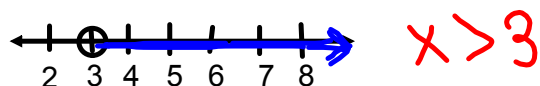
February 11, 2015

1. Graph the inequality.

$$x \leq -2$$



2. What is the inequality for the graph.



## 6.4 Solving Linear Equations by Using Addition and Subtraction

- To solve an inequality, we use the same strategy as for solving an equation. *What you do to one side you must do the SAME to the other side.*

Equation:

$$x + 7 = 15$$

$$x + 7 - 7 = 15 - 7$$

$$x = 8$$

One solution:  $x = 8$

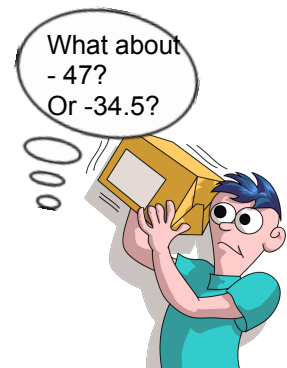
Inequality:

$$x + 7 < 15$$

$$x + 7 < 15 - 7$$

$$x < 8$$

MANY solutions; any number less than 8 is a solution.



## Solving an Inequality

- a) Solve the inequality.
- b) Verify the solution.
- c) Graph the solution.

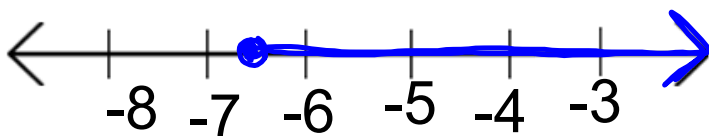
1. a)  $x - 3.5 \geq -10$

$$x - 3.5 + 3.5 \geq -10 + 3.5$$

$$x \geq -6.5$$

The solution is all numbers greater than or equal to -6.5

c) Graph:



b) Verify:

Choose numbers greater than 6.5, such as 8 or 20.

Substitute 8 into the original inequality:

$$x - 3.5 \geq -10$$

$$8 - 3.5 \geq -10$$

$$4.5 \geq -10$$

The statement is true so our solution satisfies the inequality.

What if we try 20?

$$x - 3.5 \geq -10$$

$$20 - 3.5 \geq -10$$

$$16.5 \geq -10$$

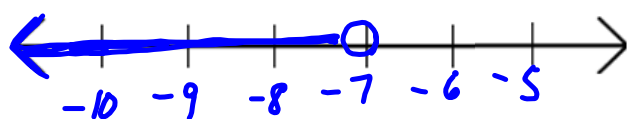
Try These!

2.  $5 > m + 12$

$$5 - 12 > m$$

$$-7 > m$$

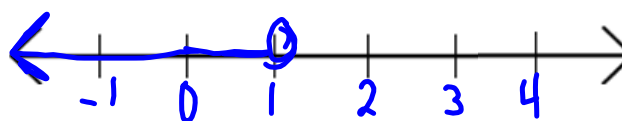
$$m < -7$$



3.  $-2y < -3y + 1$

$$-2y + 3y < -3y + 3y + 1$$

$$y < 1$$

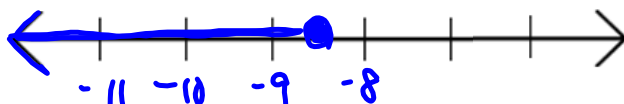


4.  $-1 \geq 4 + h + 3.5$

$$-1 - 4 - 3.5 \geq h$$

$$-8.5 \geq h$$

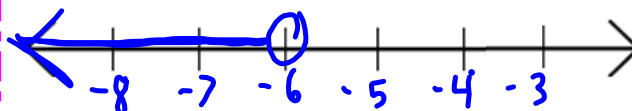
$$h \leq -8.5$$



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

Try to move letter so they end up with a positive number in front.

$$-4y + 5y < 1 - 7$$
$$y < -6$$



## Solving Problems Using Inequalities:

Alison plans to rent a hall for her grad party.

- The Douglastown Rec Centre charges \$90 plus \$20 an hour.
- The Chatham Head Rec Centre charges \$100 plus \$19 an hour.

For how many hours must she rent the hall in Douglastown in order for it to be less expensive than the hall in Chatham Head?

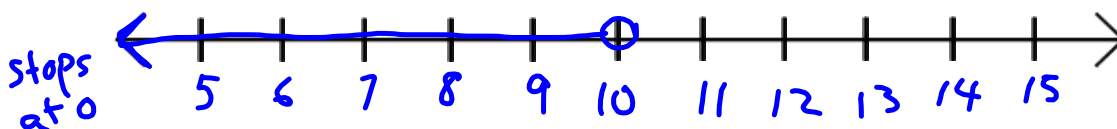
Solution:

$$\begin{array}{l} \text{Douglastown} \quad \text{Chatham Head} \\ \text{Let } h = \text{number of hours} \quad 90 + 20h < 100 + 19h \\ \text{Douglastown: } 90 + 20h \quad \text{Chatham Head: } 100 + 19h \end{array}$$

$$90 + 20h < 100 + 19h$$

$$20h - 19h < 100 - 90$$

$$h < 10$$



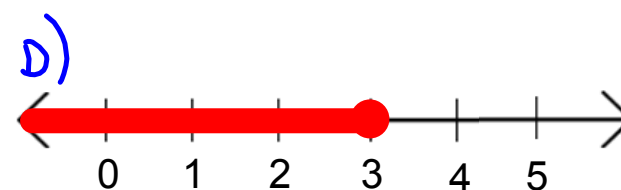
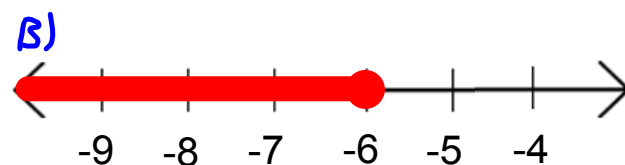
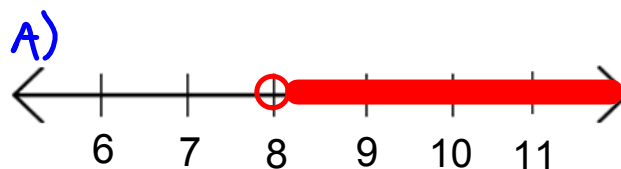
Match each inequality with the graph of its solution:

a)  $x - 3 > 5$   
 $x - 3 + 3 > 5 + 3$   
 $x > 8$

b)  $-10 \geq -4 + p$   
 $-6 \geq p$   
 $p \leq -6$

c)  $7 < r + 8$   
 $-1 < r$   
 $r > -1$

d)  $-5 + w \leq -2$   
 $w \leq 3$





Classwork / Homework:

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4(ace)  
#6(ad)  
#7  
#9(acef)  
#12