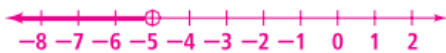


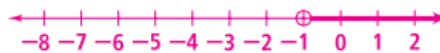
Write the # of problems you attempted at the top of your paper and start correcting (17)

Solve each inequality. Graph and check your solutions.

7.  $y - 2 < -7$   $y < -5$



8.  $v + 6 > 5$   $v > -1$



9.  $12 \geq c - 2$   $c \leq 14$



10.  $8 \leq f + 4$   $f \geq 4$



11.  $-4.3 \geq 2.4 + s$   $s \leq -6.7$



12.  $22.5 < n - 0.9$   $n > 23.4$



13.  $c + \frac{4}{7} \leq \frac{6}{7}$   $c \leq \frac{2}{7}$



14.  $p + 1\frac{1}{2} \geq 1\frac{1}{2}$   $p \geq 0$



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Solve each inequality. Justify each step.

15.  $-y - 4 + 2y > 11$

$-4 + y > 11$  Combine like terms.  
 $y > 15$  Add. Prop. of Inequal.

16.  $\frac{1}{7} + d < 1\frac{2}{7}$

$d < 1\frac{1}{7}$  Add. Prop. of Inequal.

17.  $\frac{2}{3} + v - \frac{7}{9} \leq 0$

$v - \frac{1}{9} \leq 0$  Combine like terms.  
 $v \leq \frac{1}{9}$  Add. Prop. of Inequal.

18.  $-2p - 4 + 3p > 10$

$p - 4 > 10$  Combine like terms.  
 $p > 14$  Add. Prop. of Inequal.

19.  $4y + 2 - 3y \leq 8$

$y + 2 \leq 8$  Combine like terms.  
 $y \leq 6$  Add. Prop. of Inequal.

20.  $5m - 4m + 4 > 12$

$m + 4 > 12$  Combine like terms  
 $m > 8$  Add Prop. of Inequal.

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21. The goal of a toy drive is to donate **more than 1000** toys. The toy drive already has collected 300 toys. How many more toys does the toy drive need to meet its goal? Write and solve an inequality to find the number of toys needed.

$$\begin{array}{r}
 300 + x > 1000; 701 \text{ toys} \\
 -300 \quad -300 \\
 \hline
 x > 700
 \end{array}$$

22. A family earns \$1800 a month. The family's expenses are **at least \$1250**. Write and solve an inequality to find the possible amounts the family can save each month.

$$x + 1250 \leq 1800 \text{ at most } \$550$$

23. To go to the next level in a certain video game, you must score at least 50 points. You currently have 40 points. You fall into a trap and lose 5 points. What inequality shows the points you must earn to go to the next level?

$$p + 40 - 5 \geq 50$$

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### Section 2 – Topic 6 Solving Inequalities – Part 2

When you **MULTIPLY** or **DIVIDE** each side of an inequality by a **negative number**, **reverse the direction of the inequality symbol**.

Reverse each inequality symbol below. Write the new symbol in the box.

$\leq$  >     
  $>$  <     
  $<$  >     
  $\geq$  \leq

$$6 > 4$$

$$\frac{6}{-2} < \frac{4}{-2}$$

$$-3 < -2$$

$$2 \leq 3$$

$$2(-5) \geq 3(-5)$$

$$-10 \geq -15$$

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Let's Practice! pg. 41

1. Find the solution set to each inequality. Express the solution in set notation and graphically on a number line.

a.  $-9y + 4 < -7y - 2$

$$\begin{array}{r} \cancel{+9y} + 4 < \cancel{-7y} - 2 \\ \hline 4 < 2y - 2 \\ +2 & \quad +2 \\ \hline 6 < 2y \\ \frac{6}{2} < \frac{2y}{2} \\ 3 < y \\ \rightarrow y > 3 \end{array}$$



$\{y \mid y > 3\}$

b.  $\frac{m}{3} + 8 \leq 9$

$$\begin{array}{r} \frac{m}{3} + 8 \leq 9 \\ \cancel{-8} \quad \quad \quad \cancel{-8} \\ \hline \frac{m}{3} \leq 1 \\ \cdot 3 \quad \quad \quad \cdot 3 \\ \hline m \leq 3 \end{array}$$

$\{m \mid m \leq 3\}$



Oct 2-3:46 PM

2. At 5:00 PM in Atlanta, Georgia, Ethan noticed the temperature outside was 72°F. The temperature decreased at a steady rate of 2°F per hour. At what time was the temperature below 64°F?

Let  $h$  represent the number of hours since 5:00 PM.

$72 - 2h < 64$

$$\begin{array}{r} -2h < -8 \\ \cdot \frac{1}{-2} \quad \cdot \frac{1}{-2} \\ \hline h > 4 \end{array}$$

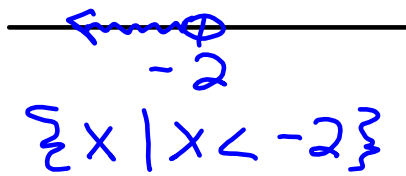
+ 4 hrs  
9:00 PM

Oct 2-3:47 PM

3. Find the solution set to the inequality. Express the solution pg. 42 in set notation and graphically on a number line.

a.  $-6(x - 5) > 42$

$$\begin{array}{r|l} -6x + 30 > 42 \\ -30 & -30 \\ \hline -6x > 12 \\ \div -6 & \div -6 \\ x < -2 \end{array}$$



b.  $4(x + 3) \geq 2(2x - 2)$

$$\begin{array}{r|l} 4x + 12 \geq 4x - 4 \\ -4x & -4x \\ \hline 12 \geq -4 \end{array}$$

← all real numbers →  
 $\{x \mid \text{all real numbers}\}$

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**BEAT THE TEST!** pg.42

1. Ulysses is spending his vacation in South Carolina. He rents a car and is offered two different payment options. He can either pay \$25.00 each day plus \$0.15 per mile (option A) or pay \$10.00 each day plus \$0.40 per mile (option B). Ulysses rents the car for one day.

Part A: Write an inequality representing the number of miles where option A will be the cheaper plan.

Let  $x$  represent the number of miles driven.

Option A:  $25 + 0.15x$       Option B:  $10 + 0.40x$

$25 + 0.15x < 10 + 0.40x$

Part B: How many miles will Ulysses have to drive for option A to be the cheaper option?

$$\begin{array}{r|l} 25 + 0.15x < 10 + 0.40x \\ -0.15x & -0.15x \\ \hline 25 < 10 + 0.25x \\ -10 & -10 \\ \hline 15 < 0.25x \\ \div 0.25 & \div 0.25 \\ 60 < x \\ \rightarrow & \rightarrow \\ x > 60 \end{array}$$

more than 60 miles

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2. Stephanie has just been given a new job in the sales department of Frontier Electric Authority. She has two salary options. She can either receive a fixed salary of **\$500.00** per week or a salary of \$200.00 per week plus a 5% commission on her weekly sales. The variable  $s$  represents Stephanie's weekly sales. Which solution set represents the dollar amount of sales that she must generate in a week in order for the **option with commission to be the better choice?** pg.43

- (A)  $\{s | s > \$300.00\}$
- (B)  $\{s | s > \$700.00\}$
- (C)  $\{s | s > \$3,000.00\}$
- (D)  $\{s | s > \$6,000.00\}$

**Answer: D**

Let  $s$  represent the weekly sales.

$$200 + 0.05s > 500$$

$$200 - 200 + 0.05s > 500 - 200$$

$$\frac{0.05s}{0.05} > \frac{300}{0.05}$$

$$s > 6000$$

or  $\rightarrow 500 < 200 + 0.05s$   
 $6000 < s$



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### Homework

Pearson page 91 (7 -14 must be shown on separate paper set up with boxes)

&

page 92 (21-23) can be worked on the worksheet if you would like



Oct 2-4:01 PM