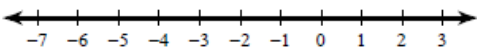
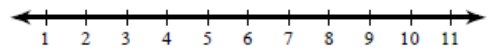


Warm-up 10-9

1. $167 < 6 + 7(2 - 7r)$



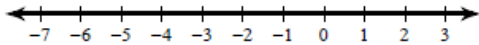
2. $5(6 + 3r) + 7 \geq 127$



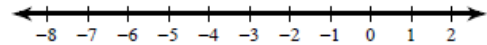
Work on the scavenger hunt when you finish.

You will not have a lot of time, so use it wisely
or you will have extra homework.

3. $-8x + 2x - 16 < -5x + 7x$

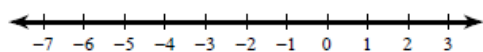


4. $-1 - 6x - 6 > -11 - 7x$

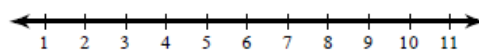


Warm-up 10-9

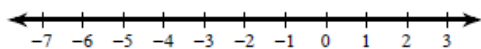
1. $167 < 6 + 7(2 - 7r)$



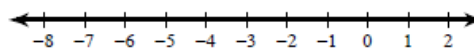
2. $5(6 + 3r) + 7 \geq 127$



3. $-8x + 2x - 16 < -5x + 7x$

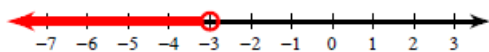


4. $-1 - 6x - 6 > -11 - 7x$



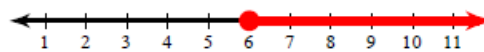
Warm-up Answers

$$1. 167 < 6 + 7(2 - 7r)$$



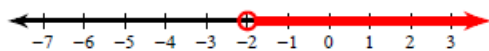
$$r < -3$$

$$2. 5(6 + 3r) + 7 \geq 127$$



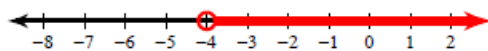
$$r \geq 6$$

$$3. -8x + 2x - 16 < -5x + 7x$$



$$x > -2$$

$$4. -1 - 6x - 6 > -11 - 7x$$



$$x > -4$$

#37

① 29.99

② $19.99 + 0.35x$

$$\begin{array}{r} 19.99 + 0.35x > 29.99 \\ -19.99 & \quad -19.99 \\ \hline \end{array}$$

$$\begin{array}{r} 0.35x > 10 \\ \underline{0.35} \quad \underline{0.35} \\ x > 28.57\dots \end{array}$$

$$x > 29 \text{ minutes}$$

$$\#7 \quad 3 \left(\frac{3-2x}{3} \right) \leq 7(3)$$

$$\begin{array}{r} 3 - 2x \leq 21 \\ -3 \quad \quad -3 \\ \hline \end{array}$$

$$\begin{array}{r} -2x \leq 18 \\ \underline{-2} \quad \underline{-2} \end{array}$$

$$x \geq -9$$

#15

- ① $300 + 10\%$ sales
 ② 1200

$$\begin{array}{r} 300 + 0.1x > 1200 \\ -300 \qquad \qquad -300 \\ \hline 0.1x > 900 \\ \frac{0.1x}{0.1} > \frac{900}{0.1} \\ x > 9000 \end{array}$$

#37

① 29.99

② $19.99 + 0.35x$

$$\begin{array}{r} 19.99 + 0.35x > 29.99 \\ -19.99 \qquad \qquad -19.99 \\ \hline 0.35x > 10 \\ \frac{0.35x}{0.35} > \frac{10}{0.35} \end{array}$$

$x > 28.57 \dots$

$x > 29$

Today's Goal

I can...

- solve application inequality problems

The average of Jim's two test scores must be at least 90 to make an A in the class. Jim got a 95 on his first test. What grades can Jim get on his second test to make an A in the class?

$$\frac{T_1 + T_2}{2}$$

$$2(90) \leq \frac{95 + T_2}{2} \geq 90$$

$$\begin{array}{r} 180 \leq 95 + T_2 \\ -95 \quad -95 \\ \hline 85 \leq T_2 \end{array}$$

$$T_2 \geq 85$$

The average of Jim's two test scores must be at least 90 to make an A in the class. Jim got a 95 on his first test. What grades can Jim get on his second test to make an A in the class?

$$\begin{aligned} 2(90) &\leq \left(\frac{95 + T_2}{2} \right) 2 \\ 180 &\leq 95 + T_2 \\ \underline{-95 \quad -95} & \\ 85 &\leq T_2 \quad T_2 \geq 85 \end{aligned}$$

$$\begin{aligned} &\frac{T_1 + T_2}{2} \\ &\frac{95 + T_2}{2} \geq 90 \end{aligned}$$

1. Daniel had \$25 to spend at the fair. If the admission to the fair is \$4 and the rides cost \$1.50 each, what is the greatest number of rides Daniel can go on?

A. Write an inequality that represents Daniel's situation.

$$25 \geq 4 + 1.50x$$

(Handwritten: -4 -4)

B. How many rides can Daniel go on?. Justify your answer.

$$\frac{21}{1.50} \geq \frac{1.50x}{1.50}$$

14 rides or less

$$14 \geq x$$

C. Graph the solutions on a number line.

2. The seventh grade class is putting on a variety show to raise money. It cost \$700 to rent the banquet hall that they are going to use. If they charge \$15 for each ticket, how many tickets do they need to sell in order to raise at least \$1000?

A. Write an inequality that represents the situation.

$$1000 \leq 15x - 700$$

$+700$ $+700$

B. How many tickets do they need to sell? Justify your answer.

$$\frac{1700}{15} \leq \frac{15x}{15}$$

$$113.33 \leq x$$

$$x \geq 114 \text{ tickets}$$

C. Graph the solution on a number line.

4. Triniti had \$500 in a saving account at the beginning of the summer. She wants to have at least \$200 in the account by the end of the summer. She withdraws \$25 each week for food, clothes, and movie tickets.

- A. Write an inequality that represents Triniti's situation.

$$500 - 200 \geq 25w$$
$$\frac{300}{25} \geq \frac{25w}{25}$$

- B. How many weeks can Triniti withdraw money from her account. Justify your answer.

$$12 \geq w$$
$$w \leq 12 \text{ weeks}$$

- C. Graph the solution on a number line.

- 1) Elisa won 40 lollipops playing basketball at the school fair. She gave two to every student in her math class. She has at least 7 lollipops left.
 - a) Write an inequality to represent the situation. Be sure to define your variable.

 - b) Solve the inequality to find the maximum number of students in her class.

- 2) More than 450 students went on a field trip. Ten buses were filled and 5 more students traveled in a car.
 - a) Write an inequality to represent the situation. Be sure to define your variable.

 - b) Solve the inequality to find the minimum number of people on each bus.

- 3) Bill spent less than \$26 on a magazine and five composition books. The magazine cost \$4.
- Write an inequality to represent the situation. Be sure to define your variable.
 - Solve the inequality to find the maximum cost of each composition book.
- 4) Amanda rented a bike from Shawna's Bikes. They charged her \$2 per hour, plus a \$10 fee. Amanda paid less than \$27.
- Write an inequality to represent the situation. Be sure to define your variable.
 - Solve the inequality to find the maximum number of hours Amanda rented the bike.

- 5) You need to buy some pencils and an eraser. You can spend no more than \$5. The eraser costs \$1 and the pencils cost \$0.25 each.
- Write an inequality to represent the situation. Be sure to define your variable.
 - Solve the inequality to find the maximum number of pencils you can buy.
- 6) Mark's Canoes rents canoes for \$20 plus \$35 per hour. You do not want to spend more than \$150. For how many hours can you afford to rent the canoe?
- Write an inequality to represent the situation. Be sure to define your variable.
 - Solve the inequality and answer the question.

- 7) For a field trip 18 students rode in cars and the rest filled five buses. How many students were in each bus if no more than 250 students went on the trip?
- a) Write an inequality to represent the situation. Be sure to define your variable.

 - b) Solve the inequality and answer the question.
- 8) Charles is saving \$5 each week. He earns an extra \$15 by mowing his neighbor's lawn. How many weeks will he need to save in order to have at least \$75?
- a) Write an inequality to represent the situation. Be sure to define your variable.

 - b) Solve the inequality and answer the question.

Homework

Worksheet

Algebra 1 Block

Name _____

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Inequalities Word Problem Worksheet

Date _____ Period _____

Establish a variable, write an inequality to represent the scenario, and solve. Write a complete sentence to describe your solution.

- 1) Keith has \$500 in a savings account at the beginning of the summer. He wants to have at least \$200 at the end of the summer. He withdraws \$25 per week for food, clothing, and movie tickets. How many weeks can Keith withdraw money from his account?

- 2) A taxi charges a flat rate of \$1.75, plus an additional \$0.65 per mile. If Erica has at most \$10 to spend on the cab ride, how far could she travel?

- 3) Chris wants to order DVD's over the internet. Each DVD costs \$15.99 and shipping the entire order costs \$9.99. If he can spend no more than \$100, how many DVD's could he buy?

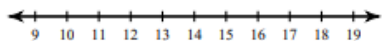
- 4) Allison practices her violin for at least 12 hours per week. She practices for three fourths of an hour each session. If Allison has already practiced 3 hours this week, how many more sessions remain for her to meet or exceed her weekly practice goal?

- 5) Pet Supplies makes a profit of \$5.50 per bag on its line of natural dog food. If the store wants to make a profit of no less than \$5225, how many bags of dog food does it need to sell?

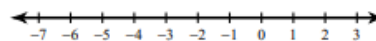
- 6) Ryan is a wrestler trying to make weight. He currently weighs 200 lbs. If he cuts 2 lbs. per week, how many weeks will it take him to weigh less than 175 lbs.?
- 7) Tom is deciding whether or not he should become a member gym to use their basketball courts. The membership cost is \$135. Members pay \$2 to rent out the basketball courts. Non-members can rent the court also, but they have to pay \$11 each time. how many times would Tom need to rent the court in order for it be cheaper to be a member than a non member?

Solve each inequality and graph its solution.

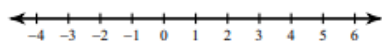
8) $24 + 6k < -6(-4 - k)$



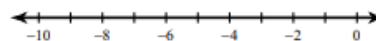
9) $-2n - 40 < 5(6 + n) + 7n$



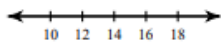
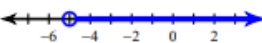
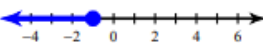
10) $-4(4 + 7x) + x \geq -6x + 5$



11) $-7(4 - x) + 4 \geq -18 + 7x$



Answers to Inequalities Word Problem Worksheet

- 1) No more than 12 weeks 2) No more than 12.7 miles 3) No more than 5 DVDs
4) At least 12 more sessions 5) At least 950 bags of dog food.
6) More than 12.5 weeks. 7) At least 15 times
- 8) No solution. :  9) $n > -5$: 
- 10) $x \leq -1$:  11) No solution. : 