Warm-up 10/11

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.

Warm-up 10/11

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.

   $$40 - 2x \geq 7 \qquad x = students$$
   $$-40 \qquad\qquad -40$$

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

   $$\frac{-2x}{-2} \geq \frac{-33}{-2} \qquad 16 \text{ student max in her class}$$
   $$x \leq 16.5$$

2) More than 450 students went on a field trip. Ten buses were filled and 5 more students traveled in a car.

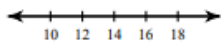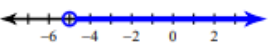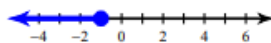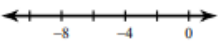   a) Write an inequality to represent the situation. Be sure to define your variable.

   $$10x + 5 > 450 \qquad x = students \text{ on the bus}$$
   $$\quad -5 \quad -5$$

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

   $$\frac{10x}{10} > \frac{445}{10} \qquad 45 \text{ students}$$

   $$x > 44.5$$

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. :

Algebra 1 Block   Name_____

Inequalities Word Problem Worksheet

Date_____ Period_____

Establish a variable, write an inequality to represent the scenerio, 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?

$$500 - 25x \geq 200$$
$$-200 \qquad -200$$
$$300 - 25x \geq 0$$
$$+25x \qquad +25x$$

$$\frac{300}{25} \geq \frac{25x}{25}$$
$$12 \geq x \qquad x \leq 12$$

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?

$$10 \geq 0.65x + 1.75$$

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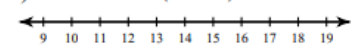
5) Pet Supplies makes a profit of $5.50 per bag on its line of natural dog food. If the store wants to make a profit of no less than $5225, how many bags of dog food does it need to sell?

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?
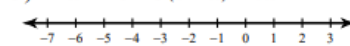
Solve each inequality and graph its solution.
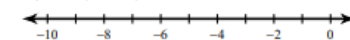
8) $24 + 6k < -6(-4 - k)$

9 10 11 12 13 14 15 16 17 18 19

$24 + 6K < 24 + 6K$
$\qquad -6K \qquad -6K$
$24 < 24$
(no solution)

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

-7 -6 -5 -4 -3 -2 -1 0 1 2 3

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

-4 -3 -2 -1 0 1 2 3 4 5 6
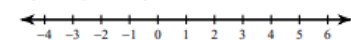
$-16 -28x + x \geq -6x + 5$
$-16 - 27x \geq -6x + 5$
$\qquad +27x \qquad +27x$
$-16 \geq 21x + 5$
$\quad -5 \qquad -5$
$\dfrac{-21}{21} \geq \dfrac{21x}{21}$
$-1 \geq x$
$\boxed{x \leq -1}$

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

$-28 + 7x + 4 \geq -18 + 7x$

-10 -8 -6 -4 -2 0

$-24 + 7x \geq -18 + 7x$
$\quad -7x \qquad\qquad -7x$
$-24 \geq -18$
(no solution)