Name: Key
Mrs. Roumbos

Date:_____
8A Period____

Inequalities Homework

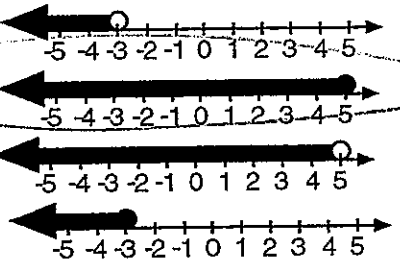
1) What is the solution to the inequality $7x - 26 > 3(3x - 2)$?

A) $x < -10$ C) $x < -16$
B) $x > -16$ D) $x > -10$

$7x - 26 > 3(3x - 2)$
$7x - 26 > 9x - 6$
$-7x \quad -7x$
$-26 > 2x - 6$
$+6 \quad +6$
$\frac{-20}{2} > \frac{2x}{2}$
$-10 > x$ or $x < -10$

2) Which of the following represents the solution set and graph for the inequality $2x - 8 \leq 2$?

A) $x < -3$,
B) $x \leq 5$,
C) $x < 5$,
D) $x \leq -3$,



$2x - 8 \leq 2$
$+8 \quad +8$
$\frac{2x}{2} \leq \frac{10}{2}$
$x \leq 5$

3) How many of the following numbers are solutions to $3x - 7 < 35$?

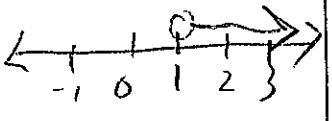
-15, -14, 13, 14, 15

A) 1 B) 2 C) 3 D) 4

$3x - 7 < 35$
$+7 \quad +7$
$\frac{3x}{3} < \frac{42}{3}$
$x < 14$

4) Solve and graph the solution set for the given inequality in the domain of the set of real numbers:

$5x + 4 > 11 - 2x$
$+2x \quad +2x$
$7x + 4 > 11$
$-4 \quad -4$
$\frac{7x}{7} > \frac{7}{7}$
$x > 1$



$x > 1$

5) Misha needs to rent a car. He finds a rental agency that will rent him a car for $150 a week plus charge $0.25 a mile. If Misha can spend *at most* $300, how many miles can he drive in one week?

$150 + 0.25x \leq 300$
$-150 \quad -150$
$\frac{0.25x}{0.25} \leq \frac{150}{0.25}$
$x \leq 600$

He can drive at most 600 miles

6) Lucas wants to buy some amusement ride tickets that sell for $1.35 each. If he also wants to buy a soda for $1.50, what is the most number of tickets he can buy if he only has $23.00 in his pocket?

$1.35x + 1.5 \leq 23.00$
$-1.5 \quad -1.5$
$\frac{1.35x}{1.35} \leq \frac{21.50}{1.35}$
$x \leq 15.925$ or $x \leq 15\frac{25}{27}$

He can buy at most 15 tickets

7) A doughnut shop charges $0.70 for each doughnut and $0.30 for a carryout box. Shirley has $5.00 to spend. She needs to determine the *most* doughnuts (x) she can buy when she only puts them in one carryout box.

What is an equation that can be used to answer the given problem?

A) $30x + 70 < 500$ C) $70x + 30 < 500$
B) $70x + 30 \leq 500$ D) $30x + 70 \leq 500$

8) Andrea has a sum of money in a savings account. If she withdraws $150, she still has *at least* $525 in her savings account. Which inequality can be used to find the minimum amount of money in the account?

A) $x + 150 \leq 525$ C) $x + 150 \geq 525$
B) $x - 150 \leq 525$ D) $x - 150 \geq 525$