Name: Key

Section 9.3 Extra Practice

1. Solve each inequality.

a) $3x - 5 > 2x + 4$

$-2x \quad +5 \qquad -2x \quad +5$

$x > 9$

b) $4x + 3.2 < 2x + 1.4$

$-2x \quad -3.2 \qquad -2x \quad -3.2$

$\frac{2x}{2} < \frac{-1.8}{2}$

$x < -0.9$

c) $0.75x + 8 \leq 0.5(3x - 5)$

$0.75x + 8 \leq 1.5x - 2.5$

$-0.75x \quad +2.5 \qquad -0.75x \quad +2.5$

$\frac{10.5}{0.75} \leq \frac{0.75x}{0.75}$

$14 \leq x$

d) $6(5 - x) \leq 7(x - 5)$

$30 - 6x \leq 7x - 35$

$+35 \quad +6x \qquad +6x \quad +35$

$\frac{65}{13} \leq \frac{13x}{13}$

$5 \leq x$

2. Solve. Fill in the given number line to represent each solution.

a) $9x + 4 \leq 5x + 12$

$-5x \quad +4 \qquad -5x \quad -4$

$\frac{4x}{4} \leq \frac{8}{4}$

$x \leq 2$

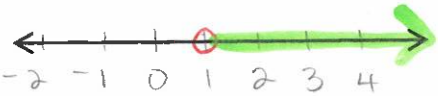
b) $3(2x - 2) > 2(x - 1)$

$6x - 6 > 2x - 2$

$-2x \quad +6 \qquad -2x \quad +6$

$\frac{4x}{4} > \frac{4}{4}$

$x > 1$



Name: _____

3. Verify each solution.

a) $\frac{x}{2} - 2 \leq 6$; $x \leq 16$

Boundary: $\frac{16}{2} - 2 = 6$

$8 - 2 = 6$

$6 = 6$ ✓

Inequality: $x = 0$ $\frac{0}{2} - 2 \leq 6$

$-2 \leq 6$ ✓

b) $2x - 9 > 5x + 6$; $x < -5$

Boundary: $2(-5) - 9 = 5(-5) + 6$

$-10 - 9 = -25 + 6$

$-19 = -19$ ✓

Inequality: $x = -10$ $2(-10) - 9 > 5(-10) + 6$

$-20 - 9 > -50 + 6$

$-29 > -44$ ✓

4. Andrew wants to order pizza, and he can spend *up to $15.00*. A large plain cheese pizza costs $11.00, plus an additional $0.75 for each topping. How many toppings can Andrew get on his pizza?

a) Write an inequality to model the situation.

Cost ≤ 15

Let t = # of toppings

$11 + 0.75t < 15$

b) Solve and verify the inequality.

$11 + 0.75t < 15$

$-11 \quad -11$

$\frac{0.75t}{0.75} < \frac{4}{0.75}$

$t < 5.333\ldots = 5\frac{1}{3} = \frac{16}{3}$

5 topping pizza $= 11 + 5(0.75) = 14.75$

6 topping pizza $= 11 + 6(0.75) = 15.50$

$11 + \frac{3}{4}\left(\frac{16}{3}\right) = 15$

$11 + \frac{48}{12} = 15$

$11 + 4 = 15$

$15 = 15$ ✓

$11 + \frac{3}{4}(0) < 15$

$11 < 15$ ✓

c) What's the most amount of toppings can he get?

Andrew can get at most 5 toppings

5. The following are the wages for two summer jobs building grain bins.

Job A: $60 per bin plus $120 per day

Job B: $75 per bin plus $90 per day

Write and solve an inequality to determine how many grain bins you would need to build each day to make *Job B pay more than Job A*.

Give your answer algebraically, and in a sentence.

Let b = the number of bins

$B > A \Rightarrow 75b + 90 > 60b + 120$

$-60b - 90 \quad -60b - 90$

$\frac{15b}{15} > \frac{30}{15}$

$b > 2$

You would need to build more than 2 bins per day to make Job B pay more than Job A.