

Warm-Up:

Solve.

$$1) 2x - 14 \geq x + 12$$

$$\begin{array}{r} -x \quad -x \\ \hline x - 14 \geq 12 \\ +14 \quad +14 \end{array}$$

$$x \geq 26$$

$$2) 6x - 8 > 16$$

$$\begin{array}{r} +8 \quad +8 \\ \hline 6x > 24 \\ \hline 6 \quad 6 \\ x > 4 \end{array}$$

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pg 305 #34, 48, 20

$$20) \frac{3}{4}q \geq (-33) \cdot \frac{4}{3}$$

$$q \geq 44$$

34)  $p = \text{people}$

$$\frac{28.95p}{28.95} \geq \frac{4000}{28.95}$$

$$p \geq 138.2$$

$$139 \text{ people}$$

$$48) s = \frac{d}{t}$$
$$1.5(65) \leq \left(\frac{d}{1.5}\right) 1.5$$

$$97.5 \leq d$$

Miles

### Section 6-3: Solving Multi-Step Inequalities

1) The inequality  $F > 212$  represents all the temperatures in Fahrenheit for which water is a gas (steam). The inequality  $1.8C + 32 > 212$  represents the temperature  $C$  in Celsius for which water is a gas. Find the temperatures in degrees Celsius for which water is a gas.

$$\begin{array}{r} 1.8C + 32 > 212 \\ -32 \quad -32 \\ \hline 1.8C > 180 \\ \frac{1.8C}{1.8} > \frac{180}{1.8} \\ C > 100 \end{array}$$

Solve.

2)  $13 - 11d \leq 79$

$$\begin{array}{r} 13 - 11d \leq 79 \\ -13 \quad -13 \\ \hline \end{array}$$

$$\begin{array}{r} -11d \geq 66 \\ \frac{-11d}{-11} \geq \frac{66}{-11} \end{array}$$

$$d \geq -6$$

3) Define a variable, write an inequality, and solve the problem. Check your solution.

Four times a number plus twelve is less than that number minus three.

$$\begin{array}{r} 4n + 12 < n - 3 \\ -n \qquad \qquad -n \\ \hline 3n + 12 < -3 \\ -12 \qquad -12 \\ \hline 3n < -15 \\ \frac{3n}{3} < \frac{-15}{3} \\ n < -5 \end{array}$$

Solve.

4)  $6c + 3(2 - c) \geq -2c + 1$

$$6c + 6 - 3c \geq -2c + 1$$

$$\begin{array}{r} 3c + 6 \geq -2c + 1 \\ +2c \qquad +2c \\ \hline \end{array}$$

$$\begin{array}{r} 5c + 6 \geq 1 \\ -6 \quad -6 \\ \hline \end{array}$$

$$\begin{array}{r} 5c \geq -5 \\ \frac{5c}{5} \geq \frac{-5}{5} \\ c \geq -1 \end{array}$$

5)  $-7(s + 4) + 11s \geq 8s - 2(2s + 1)$

$$-7s - 28 + 11s \geq 8s - 4s - 2$$

$$\begin{array}{r} 4s - 28 \geq 4s - 2 \\ -4s \qquad -4s \\ \hline \end{array}$$

$$-28 \geq -2$$

No Solution

Homework: pg. 311-313 #10 - 30 even, 34-36 all, 53, 54

Quiz Next Class over Sections 6-1, 6-2