

Name

Key

Directions

Make sure that you write your solutions using the format discussed and illustrated during class. You should show your scratch work, but do it off to the side and box it off. Do not put any part of your actual solution in a box or circle. Make sure that you double check to see if I want you to state the solution or the solution set.

1. The Goop is having a 30% sale on hoodies. The discounted price of a hoody is \$28. What was the price before the 30% price reduction?

Let x represent the original price.

$$\begin{aligned} x - .30x &= \$28 \\ .70x &= \$28 \\ \frac{.70x}{.70} &= \frac{\$28}{.70} \end{aligned}$$

$$x = \$40$$

The pre-sale price
of a Goop
hoody was \$40

2. State the solution set to the inequality $x > \frac{5}{2}$ using interval notation. (A sentence is called for here.)

The solution set is $(\frac{5}{2}, \infty)$.

3. State the solution set to the inequality $x \leq 0$ using set builder notation. (A sentence is called for here.)

The solution set is $\{x \mid x \leq 0\}$

4. State the solution set to the inequality $x \leq 5$ using interval notation. (A sentence is called for here.)

The solution set is $(-\infty, 5]$.

5. Solve the inequality $3 - 7x \leq 17$ and graph the solution set on a number line. (A ruler is called for here.)

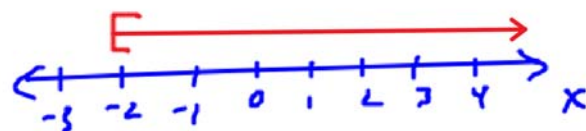
$$3 - 7x \leq 17$$

$$3 - 7x - 3 \leq 17 - 3$$

$$-7x \leq 14$$

$$\frac{-7x}{-7} \geq \frac{14}{-7}$$

$$x \geq -2$$



6. Solve the inequality $8x + 3 > 3(2x + 1) - x + 5$. State the solution set using interval notation.

$$8x + 3 > 3(2x + 1) - x + 5$$

$$8x + 3 > 6x + 3 - x + 5$$

$$8x + 3 > 5x + 8$$

$$8x + 3 - 5x > 5x + 8 - 5x$$

$$3x + 3 > 8$$

$$3x + 3 - 3 > 8 - 3$$

$$3x > 5$$

$$\frac{3x}{3} > \frac{5}{3}$$

$$x > \frac{5}{3}$$

The solution set
is $(\frac{5}{3}, \infty)$.