

## Equations Study Guide

## Math 6

For each statement, write the corresponding inequality.

1. 10.01 is greater than x.

$$10.01 > x$$

2. 31 is not equal to 32.

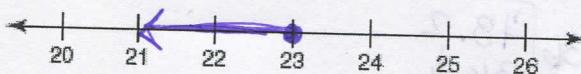
$$31 \neq 32$$

3. x is less than or equal to 6.

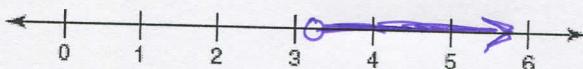
$$x \leq 6$$

Graph the solution set for each inequality.

4.  $x \leq 23$



5.  $x > 3\frac{1}{3}$



For each equation, state the inverse operation needed to isolate the variable. Then, solve and check the equation.

6.  $y - 27 = 35$  Addition

$$\begin{array}{rcl} +27 & & \\ \hline y & = & 62 \end{array}$$

$$\begin{array}{rcl} 62 - 27 & = & 35 \\ 35 & = & 35 \checkmark \end{array}$$

7.  $345.28 - 19.83 = 19.83 + z$  Subtraction

$$\begin{array}{rcl} -19.83 & & \\ \hline 25.45 & = & z \end{array}$$

$$\begin{array}{rcl} 45.28 & = & 19.83 + 25.45 \\ 45.28 & = & 45.28 \checkmark \end{array}$$

8.  $\frac{m}{8} = 6.8$  Multiplication

$$\begin{array}{rcl} m & = & 48 \\ 48 & = & 6 \\ 6 & = & 60 \checkmark \end{array}$$

9.  $\frac{7x}{7} = 56$  Division

$$\begin{array}{rcl} x & = & 8 \\ 7 \cdot 8 & = & 56 \\ 56 & = & 56 \checkmark \end{array}$$

10. Caden exercises daily by walking on a treadmill. He sets the machine so that he will walk at a steady rate of 3.6 miles per hour.

a. If  $t$  represents time in hours and  $d$  represents distance in miles, write an equation that models the relationship between these variables.

$$d = 3.6t$$

b. Use your equation to calculate the distance Caden will walk in  $\frac{3}{4}$  of an hour.

$$d = 3.6(0.75)$$

$$d = 2.7 \text{ miles}$$

c. Use your equation to calculate how long it will take for Caden to walk 4.32 miles.

$$\frac{4.32}{3.6} = \frac{3.6t}{3.6}$$

$$1.2 \text{ hours} = t$$

$$\begin{array}{r} 4 \\ 36 \\ \times 75 \\ \hline 180 \\ +2520 \\ \hline 2700 \end{array}$$

$$\begin{array}{r} 1.2 \\ 36 \overline{)43.2} \\ \cdot 36 \downarrow \\ 72 \\ -72 \\ 0 \end{array}$$