

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.

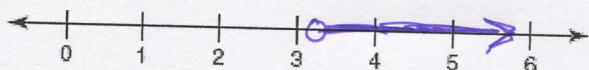
$$x \leq 6$$

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

$$\begin{array}{r} +27 \\ y - 27 = 35 \\ \hline y = 62 \end{array}$$

$$62 - 27 = 35$$

$$35 = 35 \checkmark$$

7. $45.28 = 19.83 + z$

Subtraction

$$\begin{array}{r} -19.83 \\ 45.28 = 19.83 + z \\ \hline 25.45 = z \end{array}$$

$$25.45 = z$$

$$45.28 = 19.83 + 25.45$$

$$45.28 = 45.28 \checkmark$$

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

Multiplication

$$\begin{array}{r} m = 48 \end{array}$$

$$\frac{48}{8} = 6$$

$$6 = 6 \checkmark$$

9. $7x = 56$

Division

$$\begin{array}{r} x = 8 \end{array}$$

$$7 \cdot 8 = 56$$

$$56 = 56 \checkmark$$

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.

$$\begin{array}{r} 4.32 = 3.6t \\ 3.6 \quad 3.6 \end{array}$$

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

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

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