

More Solving for a Variable

Name: Key

7th Grade Math

Solve for the indicated variable:

1. $t = 10s$ for s

$$\overline{10} \quad \overline{10}$$

$$\frac{t}{10} = s$$

2. $\frac{8m}{b} = t$ for m

$$b \cdot \frac{8m}{b} = t \cdot b$$

$$\frac{8m}{8} = \frac{bt}{8}$$

$$m = \frac{bt}{8}$$

3. $y - 5x = 6$ for y

$$+5x \quad +5x$$

$$y = 5x + 6$$

4. $\frac{m}{n} = 5$ for n

$$n \cdot \frac{m}{n} = 5 \cdot n$$

$$\frac{m}{5} = \frac{5n}{5}$$

$$\frac{m}{5} = n$$

5. $\frac{5-x}{y} = z$ for y

$$y \cdot \frac{5-x}{y} = z \cdot y$$

$$\frac{5-x}{z} = \frac{yz}{z}$$

$$\frac{5-x}{z} = y$$

6. $\frac{x}{2} = y$ for x

$$2 \cdot \frac{x}{2} = y \cdot 2$$

$$x = 2y$$

$$7. s = 20n - 100 \text{ for } n$$

$$\begin{array}{r} +100 \\ +100 \end{array}$$

$$\frac{s+100}{20} = \frac{20n}{20}$$

$$\frac{s+100}{20} = n$$

$$8. PV = nRT \text{ for } T$$

$$\frac{PV}{nR} = T$$

$$\frac{PV}{nR} = T$$

Solve for x (old stuff)

$$11. 7 - 2x = 21$$

$$\begin{array}{r} -7 \\ -7 \end{array}$$

$$\begin{array}{r} -2x = 14 \\ \underline{-2} \quad \underline{-2} \end{array}$$

$$x = -7$$

$$12. 4(x - 4) = -2(x - 1)$$

$$\begin{array}{r} 4x + -16 = -2x + 2 \\ +2x \quad \quad +2x \end{array}$$

$$\begin{array}{r} 6x + -16 = 2 \\ +16 \quad +16 \end{array}$$

$$\begin{array}{r} 6x = 18 \\ \underline{6} \quad \underline{6} \\ x = 3 \end{array}$$

$$9. \frac{x}{y} = 8 \text{ for } y$$

$$y \cdot \frac{x}{y} = 8 \cdot y$$

$$\frac{x}{8} = \frac{8y}{8}$$

$$\frac{x}{8} = y$$

$$10. \frac{5-x}{z} = y \text{ for } z$$

$$z \cdot \frac{5-x}{z} = y \cdot z$$

$$\frac{5-x}{y} = \frac{yz}{y}$$

$$\frac{5-x}{y} = z$$

$$13. 6 + 3(3x - 4) = 29$$

$$6 + 9x + -12 = 29$$

$$\begin{array}{r} 9x + -6 = 29 \\ +6 \quad +6 \end{array}$$

$$9x = 35$$

$$x = \frac{35}{9} = 3\frac{7}{9}$$

$$14. x + 12 - 2x = 7 + 4x - 35$$

$$\begin{array}{r} -x + 12 = 4x + -28 \\ +x \quad \quad +x \end{array}$$

$$\begin{array}{r} 12 = 5x + -28 \\ +28 \quad \quad +28 \end{array}$$

$$\begin{array}{r} 40 = 5x \\ \underline{5} \quad \underline{5} \\ x = 8 \end{array}$$