

Algebra 1, Wk 1 Quiz, Unit 1: Solving Equations

Must Show All Your Work to Get Credit

1. $-6 = \frac{x}{8} + 4$

$x = -80$

$$\begin{array}{r} -6 = \frac{x}{8} + 4 \\ -4 \qquad -4 \\ \hline -10 = \frac{x}{8} \\ 8(-10) = \left(\frac{x}{8}\right)8 \\ -80 = x \end{array}$$

2. $3n + 6 = -3(3n + 4)$

$n = -\frac{3}{2}$

$$\begin{array}{r} 3n + 6 = -3(3n + 4) \\ 3n + 6 = -9n - 12 \\ -3n \qquad -3n \\ \hline 6 = -12n - 12 \\ +12 \qquad +12 \\ \hline 18 = -12n \\ -12 \qquad -12 \\ \hline -\frac{3}{2} = n \end{array}$$

3. $11 = -d + 15$

$d = 4$

$$\begin{array}{r} 11 = -d + 15 \\ -15 \qquad -15 \\ \hline -4 = -d \\ -1 \qquad -1 \\ \hline 4 = d \end{array}$$

4. $2 = 3(2 - d) - (d + 6)$

$d = -\frac{1}{2}$

$$\begin{array}{r} 2 = 3(2 - d) - 1(d + 6) \\ 2 = 6 - 3d - d - 6 \\ 2 = -4d \\ -4 \qquad -4 \\ \hline -\frac{1}{2} = d \end{array}$$

5. $3(y + 6) - 6y = 30$

$y = -4$

$$\begin{array}{r} 3(y + 6) - 6y = 30 \\ 3y + 18 - 6y = 30 \\ -3y + 18 = 30 \\ -18 \qquad -18 \\ \hline -3y = 12 \\ -3 \qquad -3 \\ \hline y = -4 \end{array}$$

6. $\frac{2}{7}w - 4 = 2$

$$\underline{w = 21}$$

$$\begin{array}{r} \frac{2}{7}w - 4 = 2 \\ +4 \quad +4 \\ \hline \end{array}$$

$$\frac{2}{7}w = 6$$

$$7\left(\frac{2}{7}w\right) = (6)7$$

$$\frac{2w}{2} = \frac{42}{2}$$

$$w = 21$$

$$\begin{array}{r} -2 + \frac{3x}{5} = 6 \\ +2 \quad +2 \\ \hline \end{array}$$

$$\frac{3x}{5} = 8$$

$$5\left(\frac{3x}{5}\right) = (8)5$$

$$\frac{3x}{3} = \frac{40}{3}$$

$$x = \frac{40}{3}$$

$$\underline{x = \frac{40}{3}}$$

8. John and 2 friends are going out for pizza for lunch. They split one pizza and 3 large drinks. The pizza cost \$14.00. After using a \$7.00 gift certificate, they spend a total of \$12.10. The following equation models this situation. Find the cost of one large drink.

$$3d + 14 - 7 = 12.10$$

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

$$\frac{3d}{3} = \frac{5.10}{3}$$

$$\underline{d = 1.70}$$

9. A customer went to a Lowes and bought some potting soil for \$17.50 and 4 bush. The total bill was \$53.50. Write and solve an equation to find the price of each bush (use the variable b for bush).

$$\begin{array}{r} 17.5 + 4b = 53.50 \\ -17.5 \quad -17.5 \\ \hline \end{array}$$

$$\frac{4b}{4} = \frac{36}{4}$$

$$\underline{b = 9}$$

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10. $6(2y - 1) + 12 = 9$

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$$12y - 6 + 12 = 9$$

$$\begin{array}{r} 12y + 6 = 9 \\ -6 \quad -6 \\ \hline \end{array}$$

$$\frac{12y}{12} = \frac{3}{12}$$

$$y = \frac{3}{12}$$

$$^2 \quad y = \frac{1}{4}$$

$$\underline{y = \frac{1}{4}}$$