

Name:

Period:

Notes 4-4

Solving Two-Step Equations
with the Distributive Property

Unit 4

Int 1

Solve each two-step equation. Check your solution

Ex. 1: $3(x) + (-5) = 14$

$$\begin{array}{r} \cancel{+5} \quad \cancel{+5} \\ \hline 3x = 19 \\ \underline{\quad} \quad \underline{\quad} \\ x = \frac{19}{3} \quad 6\frac{1}{3} \quad 6.\bar{3} \end{array}$$

Ex. 2: $-5(s) + 8 = -2$

$$\begin{array}{r} \cancel{-8} \quad \cancel{-8} \\ \hline -5s = -10 \\ \underline{\quad} \quad \underline{\quad} \\ s = 2 \end{array}$$

Two-Step Equations with Distribution

Ex. 3: $2(x+4) = 20$

$$\begin{array}{r} \cancel{2x} \quad \cancel{+8} = 20 \\ \underline{\quad} \quad \underline{\quad} \\ 2x = 12 \\ \underline{\quad} \quad \underline{\quad} \\ x = 6 \quad \checkmark \end{array}$$

Ex. 4: $3(b-6) = 12$

$$\begin{array}{r} \cancel{3b} \quad \cancel{-18} = 12 \\ \underline{\quad} \quad \underline{\quad} \\ 3b = 30 \\ \underline{\quad} \quad \underline{\quad} \\ b = 10 \end{array}$$

Ex. 5: $-7(6+d) = 49$

$$\begin{array}{r} \cancel{-42} \quad \cancel{-7d} = 49 \\ \underline{\quad} \quad \underline{\quad} \\ -7d = 91 \\ \underline{\quad} \quad \underline{\quad} \\ d = -13 \end{array}$$

Distribution Using Rational Coefficients

$$\frac{1}{4}(d-3) = -15 \cdot \frac{4}{1}$$

$$\begin{array}{r} \cancel{\frac{1}{4}d} \quad \cancel{-\frac{3}{4}} = -60 \\ \underline{\quad} \quad \underline{\quad} \\ d - 3 = -60 \\ \underline{\quad} \quad \underline{\quad} \\ d = -57 \end{array}$$

Ex. 7: $.75(6+f) = 12$

$$\begin{array}{r} \cancel{.75} \cdot \cancel{6} \quad \cancel{.75} \cdot f = 12 \\ \underline{\quad} \quad \underline{\quad} \\ 6 + f = 16 \\ \underline{\quad} \quad \underline{\quad} \\ f = 10 \end{array}$$

Ex. 8: $(w+3) \frac{5}{9} = 40 \cdot \frac{9}{8}$

$$\begin{array}{r} \cancel{\frac{5}{9}} \cdot \cancel{w} \quad \cancel{3} = 72 \\ \underline{\quad} \quad \underline{\quad} \\ w + 3 = 72 \\ \underline{\quad} \quad \underline{\quad} \\ w = 69 \end{array}$$

$$\text{Ex. 9: } 8 = \frac{m}{-5} + (-7)$$

$$\begin{array}{r} +7 \\ \hline -5 \cdot 15 = \frac{m}{-5} \end{array}$$

$$\boxed{-75 = m}$$

$$8 = \frac{-75}{-5} + (-7)$$

$$8 = 15 + (-7)$$

$$\checkmark$$

$$\text{Ex. 10: } 8 = \frac{m + (-7)}{-5}$$

$$\begin{array}{r} -40 = m + (-7) \\ +7 \quad +7 \\ \hline -33 = m \end{array}$$

$$\text{Ex. 11: } \frac{m-2}{3} = 12 \cdot 3$$

$$\begin{array}{r} m-2 = 36 \\ +2 \quad +2 \\ \hline m = 38 \end{array}$$