

3-2 & 3-3 One-Step Equations

Inverse operations – opposite operations

Addition and Subtraction

Multiplication and Division

Squares and Square Roots

Use REVERSE order of operations when solving.

Examples (Addition & Subtraction):

$$a) \ x - 3 = -2$$

$$\begin{array}{rcl} \cancel{x} - \cancel{3} & = & -2 \\ +3 & & \\ \hline x & = & -2 \end{array}$$

$$b) \ p + 12 = 8$$

$$\begin{array}{rcl} \cancel{p} + \cancel{12} & = & 8 \\ -12 & & \\ \hline p & = & -4 \end{array}$$

$$c) \ 11 + r = 62$$

$$\begin{array}{rcl} \cancel{11} + \cancel{r} & = & 62 \\ -11 & & \\ \hline r & = & 51 \end{array}$$

$$d) \ 93 = y - 21$$

$$\begin{array}{rcl} 93 & = & \cancel{y} - \cancel{21} \\ +21 & & \\ \hline y & = & 114 \end{array}$$

$$e) \ \frac{2}{3} + x = \frac{5}{6}$$

$$\begin{array}{rcl} \cancel{\frac{2}{3}} + \cancel{x} & = & \frac{5}{6} \\ -\frac{2}{3} & & \\ \hline x & = & \frac{1}{6} \end{array}$$

$$f) \ \frac{1}{5} + y = \frac{3}{4}$$

$$\begin{array}{rcl} \cancel{\frac{1}{5}} + \cancel{y} & = & \frac{3}{4} \\ -\frac{1}{5} & & \\ \hline y & = & \frac{11}{20} \end{array}$$

Examples (Multiplication & Division):

$$a) \ 3x = 12$$

$$\begin{array}{rcl} \cancel{3} \cancel{x} & = & 12 \\ 3 & & \\ \hline x & = & 4 \end{array}$$

$$c) \ 5x = -25$$

$$\begin{array}{rcl} \cancel{5} \cancel{x} & = & -25 \\ 5 & & \\ \hline x & = & -5 \end{array}$$

$$b) \ \frac{x}{4} = 2$$

$$\begin{array}{rcl} (4) \cancel{\frac{x}{4}} & = & 2 (4) \\ 4 & & \\ \hline x & = & 8 \end{array}$$

$$d) \ \frac{x}{9} = -4$$

$$\begin{array}{rcl} (9) \cancel{\frac{x}{9}} & = & -4 (9) \\ 9 & & \\ \hline x & = & -36 \end{array}$$

Examples (Fractions):

a) $\frac{2}{3}x = 2$

$$\begin{array}{r} \cancel{2} \\ \cancel{2} \end{array} \cancel{\frac{2}{3}x} = 2 \left(\frac{3}{2} \right)$$

$x = 3$

b) $\frac{5}{2}x = -20$

$$\begin{array}{r} \cancel{5} \\ \cancel{5} \end{array} \cancel{\frac{5}{2}x} = -20 \left(\frac{2}{5} \right)$$

$x = -8$

c) $\frac{1}{6}x = 6$

$$\begin{array}{r} \cancel{6} \\ \cancel{1} \end{array} \cancel{\frac{1}{6}x} = 6 \left(\frac{6}{1} \right)$$

$x = 36$

d) $\frac{7}{4}x = -14$

$$\begin{array}{r} \cancel{4} \\ \cancel{7} \end{array} \cancel{\frac{7}{4}x} = -14 \left(\frac{4}{7} \right)$$

$x = -8$

Try : p. 138 13 - 20

13) $\frac{-5r}{-5} = \frac{55}{-5}$ 14) $\frac{8d}{8} = \frac{48}{8}$

$r = -11$

$d = 6$

15) $\frac{-9t}{-26} = \frac{-26a}{-26}$ 16) $\frac{-1634}{86} = \frac{86s}{86}$

$a =$

$s = -$

17) $\frac{b}{7} \cdot 7 = -11 \cdot 7$ 18) $\frac{-v}{5} \cdot 5 = -45 \cdot 5$

$b = -11$

$v = -(-225)$

Shazam!

$v = 225$

19) $\frac{3}{2} \cdot \frac{2}{3}n = 14 \cdot \frac{3}{2}$ 20) $\frac{5}{2} \cdot \frac{2}{5}g = -14 \cdot \frac{5}{2}$

$n = 21$

$g = -35$