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) $x - 3 = -5$
$$x - 3 = -5$$
$$\underline{+3 \qquad +3}$$
$$x = -2$$

b) $p + 12 = 8$
$$p + 12 = 8$$
$$\underline{-12 \qquad -12}$$
$$p = -4$$

c) $11 + r = 62$
$$11 + r = 62$$
$$\underline{-11 \qquad -11}$$
$$r = 51$$

d) $93 = y - 21$
$$93 = y - 21$$
$$\underline{+21 \qquad +21}$$
$$y = 114$$

e) $\frac{2}{3} + x = \frac{5}{6}$
$$\frac{2}{3} + x = \frac{5}{6}$$
$$\underline{-\frac{2}{3} \qquad -\frac{2}{3}}$$
$$x = \frac{1}{6}$$

f) $\frac{1}{5} + y = \frac{3}{4}$
$$\frac{1}{5} + y = \frac{3}{4}$$
$$\underline{-\frac{1}{5} \qquad -\frac{1}{5}}$$
$$y = \frac{11}{20}$$

Examples (Multiplication & Division):

a) $3x = 12$
$$\frac{3x}{3} = \frac{12}{3}$$
$$x = 4$$

b) $\frac{x}{4} = 2$
$$(4)\frac{x}{4} = 2\,(4)$$
$$x = 8$$

c) $5x = -25$
$$\frac{5x}{5} = \frac{-25}{5}$$
$$x = -5$$

d) $\frac{x}{9} = -4$
$$(9)\frac{x}{9} = -4\,(9)$$
$$x = -36$$

Examples (Fractions):

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

$$\left(\dfrac{3}{2}\right)\dfrac{2}{3}x = 2\left(\dfrac{3}{2}\right)$$

$x = 3$

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

$$\left(\dfrac{2}{5}\right)\dfrac{5}{2}x = -20\left(\dfrac{2}{5}\right)$$

$x = -8$

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

$$\left(\dfrac{6}{1}\right)\dfrac{1}{6}x = 6\left(\dfrac{6}{1}\right)$$

$x = 36$

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

$$\left(\dfrac{4}{7}\right)\dfrac{7}{4}x = -14\left(\dfrac{4}{7}\right)$$

$x = -8$

Try: p. 138   13 - 20

13) $\dfrac{-5\boxed{r}}{-5} = \dfrac{55}{-5}$

$r = -11$

14) $\dfrac{8\boxed{d}}{8} = \dfrac{48}{8}$

$d = 6$

15) $\dfrac{-9\boxed{0}}{-26} = \dfrac{-26\boxed{a}}{-26}$

$a =$

16) $\dfrac{-16\,34}{86} = \dfrac{86\,s}{86}$

$s =$

17) $\dfrac{\boxed{b}}{7} \cdot 7 = -11 \cdot 7$

$b = -11$

18) $\dfrac{-\boxed{v}}{5} \cdot 5 = -45 \cdot 5$

$\ominus\boxed{v} = -(-225)$

Shazam!

$v = 225$

19) $\dfrac{3}{2} \cdot \dfrac{2}{3}\boxed{n} = 14 \cdot \dfrac{3}{2}$

$n = 21$

20) $\dfrac{5}{2} \cdot \dfrac{2}{5}\boxed{g} = -14 \cdot \dfrac{5}{2}$

$g = -35$