7.2 Two-Step Equations

Math 9   **Review of Two-Step Equations**

Part I: Equations with Integers   Solve each equation. Show how you are isolating the variable.

$2n + 4 = 18$
$-4 \quad -4$
$2n = 14$
$\div 2 \quad \div 2$
$n = 7$

$3x - 8 = -2$
$+8 \quad +8$
$3x = 6$
$\div 3 \quad \div 3$
$x = 2$

$-4 + 5y = 4$
$+4 \quad +4$
$5y = 8$
$\div 5 \quad \div 5$
$y = \frac{8}{5}$

$3t - 1 = 20$
$+1 \quad +1$
$3t = 21$
$\div 3 \quad \div 3$
$t = 7$

$7k + 3 = -2$
$-3 \quad -3$
$7k = -5$
$\div 7 \quad \div 7$
$k = -\frac{5}{7}$

$36 = 8 - 2a$
$-8 \quad -8$
$28 = -2a$
$\div -2 \quad \div -2$
$-14 = a$

Part II: Equations with Decimals   Solve each equation. Show how you are isolating the variable.

$2 + 12.5m = 0.55$
$-2 \qquad -2$
$12.5m = -1.45$
$\div 12.5 \quad \div 12.5$
$m = -0.116$

$-0.77 = -0.1a - 0.45$
$+0.45 \qquad +0.45$
$-0.32 = -0.1a$
$\div -0.1 \quad \div -0.1$
$3.2 = a$

$67 = 5.51 + 4.3d$
$-5.51 \quad -5.51$
$61.49 = 4.3d$
$\div 4.3 \qquad \div 4.3$
$14.3 = d$

$6.2 - \frac{x}{1.2} = 0.38$
$-6.2 \qquad -6.2$
$-1.2 \cdot \frac{x}{-1.2} = -5.82 \cdot -1.2$
$x = 6.984$

Part III: Equations with Fractions Solve each equation. Show how you are isolating the variable.

clear fractions by multiplying each term by the LCD.

$9 = \frac{x}{7} + 1$
$7 \cdot 9 = \frac{7 \cdot x}{7} + 1 \cdot 7$
$-1 \qquad -1$
$7 \cdot 8 = \frac{x}{7} \cdot 7$
$56 = x$

$63 = \frac{7x}{7} + 7$
$63 = x + 7$
$-7 \qquad -7$
$56 = x$

$\left(4k + \frac{2}{5} = -\frac{2}{3}\right) \cdot 15$
$60k + \frac{30}{5} = -\frac{30}{3}$
$60k + 6 = -10$
$-6 \qquad -6$
$60k = -16$
$\div 60 \quad \div 60$
$k = -\frac{16}{60} = -\frac{4}{15}$

$\frac{x}{3} - 1\frac{3}{4} = \frac{1}{2}$
$\left(\frac{x}{3} - \frac{7}{4} = \frac{1}{2}\right) \cdot 12$
$\frac{12x}{3} - \frac{84}{4} = \frac{12}{2}$
$4x - 21 = 6$
$+21 \qquad +21$
$4x = 27$
$\div 4 \qquad \div 4$
$x = \frac{27}{4}$

$\left(\frac{x}{2} + \frac{x}{3} = 10\right) \cdot 6$
$\frac{6x}{2} + \frac{6x}{3} = 60$
$3x + 2x = 60$
$5x = 60$
$\div 5 \quad \div 5$
$x = 12$

$\left(\frac{w}{3} - 2 = -5\right) \cdot 3$
$w - 6 = -15$
$+6 \qquad +6$
$w = -9$

$\left(\frac{5}{3} - 4e = -\frac{7}{2}\right) \cdot 6$
$10 - 24e = -21$
$-10 \qquad -10$
$-24e = -31$
$\div -24 \quad \div -24$
$e = \frac{31}{24}$

$\left(\frac{x}{2} + \frac{2}{5} = \frac{3}{4}\right) \cdot 20$
$10x + 8 = 15$
$-8 \qquad -8$
$10x = 7$
$\div 10 \quad \div 10$
$x = \frac{7}{10}$

$\left(\frac{y}{2} - \frac{y}{5} = 6\right) \cdot 10$
$5y - 2y = 60$
$3y = 60$
$\div 3 \quad \div 3$
$y = 20$

Assignment: p.311 #7 – 12