

Name Key

### Rational Expression Worksheet #8: Solving Equations

Solve each equation for  $x$ .

$$1.) \frac{15}{x-6} + \frac{7x}{x-6} = \frac{-6}{x-6} \quad x \neq 6$$
$$15 + 7x = -6$$
$$7x = -21$$
$$\boxed{x = -3}$$

$$2.) \frac{11x}{4x+9} - \frac{14}{4x+9} = \frac{41}{4x+9} \quad x \neq -\frac{9}{4}$$
$$11x - 14 = 41$$
$$11x = 55$$
$$\boxed{x = 5}$$

$$3.) \frac{3x}{7x} + \frac{1}{7} = \frac{4}{x} \quad x \neq 0$$
$$3x + x = 28$$
$$4x = 28$$
$$\boxed{x = 7}$$

$$4.) \frac{2x}{3x} - \frac{5}{6} = \frac{5}{2x} \quad x \neq 0$$
$$\frac{4x}{6x} - \frac{5x}{6x} = \frac{15}{6x}$$
$$4x - 5x = 15$$
$$\boxed{x = -15}$$

$$5.) \frac{1}{7(x-3)} + \frac{4}{7} = \frac{3}{(x-3)} \quad x \neq 3$$
$$\frac{1}{7(x-3)} + \frac{4(x-3)}{7(x-3)} = \frac{21}{7(x-3)}$$
$$1 + 4x - 12 = 21$$
$$4x = 32$$
$$\boxed{x = 8}$$

$$6.) \frac{2}{5} - \frac{7}{(x+6)} = \frac{9}{5(x+6)} \quad x \neq -6$$
$$\frac{2(x+6)}{5(x+6)} - \frac{7(5)}{5(x+6)} = \frac{9}{5(x+6)}$$
$$2x + 12 - 35 = 9$$
$$2x = 32$$
$$\boxed{x = 16}$$