

Equation

Unit 9.1

Advanced Problems on Solving Equations Part I

1. Solve for x as shown below.

Example:

$$\frac{5x - 2}{3} = \frac{3x + 2}{5}$$

or, $\frac{5x - 2}{3} \times 15 = \frac{3x + 2}{5} \times 15$

or, $5(5x - 2) = 3(3x + 2)$

or, $25x - 10 = 9x + 6$

or, $16x = 16 \quad \therefore x = 1$

a. $\frac{3x + 1}{2} = \frac{2x - 5}{6}$

d. $\frac{x - 7}{4} = \frac{3x - 1}{8}$

b. $\frac{x + 7}{4} = \frac{2x - 5}{5}$

e. $\frac{x - 2}{3} = \frac{4x - 5}{9}$

c. $\frac{4x - 1}{2} = \frac{7x + 5}{3}$

f. $\frac{6x + 1}{4} = \frac{5x - 2}{6}$

2. Solve for x.

a. $\frac{1}{4}(2x + 3) = x + 5$

e. $\frac{1}{5} + 7x = \frac{5}{6} - 2x$

b. $\frac{1}{3}(x + 3) = \frac{1}{5}(x + 5)$

f. $\frac{x - 9}{3} + 1 = \frac{2x}{3}$

c. $\frac{3}{4}x - \frac{1}{3}x = 10$

g. $\frac{x + 4}{3} = \frac{5x - 1}{9}$

d. $\frac{5}{6}x + 3 = \frac{1}{2}x - 5$

h. $\frac{3x - 7}{4} = \frac{x + 3}{2}$