Answer key

The method: Solving proportions

Cross-multiply, distribute, and solve for x.

$\frac{3}{x+2} = \frac{12}{x+8}$ $x = 0$

$3(x + 8) = 12(x + 2)$ cross-multiply

$3x + 24 = 12x + 24$ distribute

$-9x = 0$ get the x terms on one side

$x = 0$ divide by -9

$\frac{x-8}{x-11} = \frac{1}{2}$ $x = 5$

$2(x - 8) = 1(x - 11)$ cross-multiply

$2x - 16 = x - 11$ distribute

$x = 5$ get the x terms on one side

$\frac{x+1}{3} = \frac{x-2}{2}$ $x = 8$

$2(x + 1) = 3(x - 2)$ cross-multiply

$2x + 2 = 3x - 6$ distribute

$-x = -8$ get the x terms on one side

$x = 8$ divide by -1

Problems 1 and 2 worked out · Version 0A

$\frac{x-1}{x-12} = \frac{-2}{9}$ $x = 3$

$9(x - 1) = -2(x - 12)$ cross-multiply

$9x - 9 = -2x + 24$ distribute

$11x = 33$ get the x terms on one side

$x = 3$ divide by 11

$\frac{x+2}{x+13} = \frac{-3}{8}$ $x = -5$

$8(x + 2) = -3(x + 13)$ cross-multiply

$8x + 16 = -3x - 39$ distribute

$11x = -55$ get the x terms on one side

$x = -5$ divide by 11

Solving proportions · Version 0A

1) $x = 3$ 2) $x = -5$ 3) $x = 3$ 4) $x = 3$ 5) $x = -1$
6) $x = -2$ 7) $x = 0$ 8) $x = -5$ 9) $x = -9$
10) $x = 2$ 11) $x = 6$ 12) $x = 3$ 13) $x = -9$
14) $x = -4$ 15) $x = -3$ 16) $x = -6$ 17) $x = -2$
18) $x = 6$ 19) $x = -6$ 20) $x = 8$