8.6 Solving by Cross Multiplying

Refresh!

① $\frac{3}{x} = \frac{2}{9}$

$2x = 27$

$x = \frac{27}{2}$

② $\frac{x}{4} = \frac{5}{16}$

$16x = 20$

$x = \frac{20}{16}$

$x = \frac{5}{4}$

③ $\frac{15}{2} = \frac{x}{3}$

$2x = 45$

$x = \frac{45}{2}$

Onto Rationals!

④ $\frac{3}{x+1} = \frac{9}{4x+5}$

$3(4x+5) = 9(x+1)$

$12x + 15 = 9x + 9$

$3x = -6$

$x = -2$

⑤ $\frac{-4}{x+3} = \frac{5}{x-3}$

$-4(x-3) = 5(x+3)$

$-4x + 12 = 5x + 15$

$-9x = 3$

$x = -\frac{1}{3}$

⑥ $\frac{x-3}{x+5} = \frac{x}{x+2}$

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

$x^2 - x - 6 = x^2 + 5x$

$-6 = 6x$

$x = -1$

⑦ $\frac{4(x-4)}{x^2+2x-8} = \frac{4}{x+4}$

$(4x-16)(x+4) = 4(x^2+2x-8)$

$4x^2 - 64 = 4x^2 + 8x - 32$

$-32 = 8x$

$-4 = x$

extraneous!

(creates a zero in the denominator!)

NO solution