The method: Multiplying and dividing rational expressions

Factor everything. To divide, flip the second fraction. Cancel, then multiply.

$$\frac{x^2 - 14x + 48}{x + 5} \times \frac{x + 5}{x^2 - 5x - 24} = \frac{(x - 8)(x - 6)}{x + 5} \times \frac{x + 5}{(x - 8)(x + 3)}$$ factor everything

$$\frac{(x - 8)(x - 6)(x + 5)}{(x + 5)(x - 8)(x + 3)} = \frac{x - 6}{x + 3}$$ cancel $(x - 8)$ and $(x + 5)$

$$\frac{x^2 + 8x + 12}{x - 4} \div \frac{x + 2}{x + 5} = \frac{(x + 2)(x + 6)}{x - 4} \times \frac{x + 5}{x + 2}$$ factor, then flip the second fraction

$$\frac{(x + 2)(x + 6)(x + 5)}{(x - 4)(x + 2)} = \frac{(x + 6)(x + 5)}{x - 4}$$ cancel $(x + 2)$

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$$\frac{x^2 - 10x + 9}{x + 7} \times \frac{x + 7}{x^2 - 17x + 72} = \frac{(x - 9)(x - 1)}{x + 7} \times \frac{x + 7}{(x - 9)(x - 8)}$$ factor everything

$$\frac{(x - 9)(x - 1)(x + 7)}{(x + 7)(x - 9)(x - 8)} = \frac{x - 1}{x - 8}$$ cancel $(x - 9)$ and $(x + 7)$

$$\frac{x^2 - 3x + 2}{x - 9} \div \frac{x - 2}{x + 8} = \frac{(x - 2)(x - 1)}{x - 9} \times \frac{x + 8}{x - 2}$$ factor, then flip the second fraction

$$\frac{(x - 2)(x - 1)(x + 8)}{(x - 9)(x - 2)} = \frac{(x - 1)(x + 8)}{x - 9}$$ cancel $(x - 2)$

Multiplying and dividing rational expressions · Vers…

1) $\frac{x - 1}{x - 8}$ 2) $\frac{(x - 1)(x + 8)}{x - 9}$ 3) $\frac{(x - 8)(x - 9)}{x - 5}$

4) $\frac{(x - 6)(x + 9)}{x - 5}$ 5) $\frac{x + 6}{x - 6}$ 6) $\frac{x + 2}{x + 6}$ 7) $\frac{x + 3}{x + 2}$

8) $\frac{(x + 5)(x - 7)}{x - 9}$ 9) $\frac{x + 8}{x - 2}$ 10) $\frac{(x - 8)(x + 4)}{x - 4}$

11) $\frac{(x - 1)(x + 2)}{x - 5}$ 12) $\frac{(x + 5)(x - 7)}{x + 4}$ 13) $\frac{(x - 9)(x - 8)}{x + 5}$

14) $\frac{(x + 6)(x + 9)}{x - 8}$ 15) $\frac{(x - 4)(x + 9)}{x + 7}$ 16) $\frac{x - 3}{x + 9}$

17) $\frac{(x + 5)(x - 9)}{x - 6}$