

Rational Expressions Dominoes

START!

$$\frac{2x}{5x+4} + \frac{6x}{2x+3}$$

$$1. \quad \frac{2x}{5x+4} + \frac{6x}{2x+3} = \frac{2x(2x+3) + 6x(5x+4)}{(2x+3)(5x+4)}$$

$$= \frac{4x^2 + 12x + 30x^2 + 24x}{(2x+3)(5x+4)} = \frac{34x^2 + 36x}{(2x+3)(5x+4)}$$

Answer:

$$\frac{34x^2 + 36x}{(5x+4)(2x+3)}$$

$$\frac{2}{3x^2 + 12x} + \frac{8}{2x}$$

$$2. \quad \frac{2}{3x(x+4)} + \frac{8}{2x} \quad \text{LCD} = (2)(3)(x)(x+4)$$

$$= \frac{2(2) + 8(3)(x+4)}{2(3)(x)(x+4)} = \frac{4 + 24x + 96}{(2)(3)x(x+4)} = \frac{24x + 100}{(2)(3)x(x+4)}$$

$$= \frac{2(12x + 50)}{2(3)x(x+4)} = \frac{12x + 50}{3x(x+4)}$$

Answer: $\frac{50 + 12x}{3x(x+4)}$	$\frac{x^2 - 2x - 15}{x^2 - 6x + 5}$
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$$3. \frac{(x-5)(x+3)}{(x-5)(x-1)} = \frac{x+3}{x-1}$$

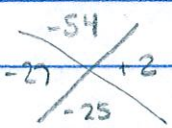
Answer: $\frac{x+3}{x-1}$	$\frac{4}{x+1} - \frac{2}{x+2}$
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LCD: $(x+1)(x+2)$

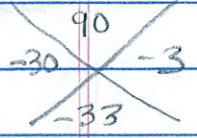
$$4. \frac{4(x+2) - 2(x+1)}{(x+1)(x+2)} = \frac{4x+8-2x-2}{(x+1)(x+2)} = \frac{2x+6}{(x+1)(x+2)}$$

Answer: $\frac{2x+6}{(x+1)(x+2)}$	$\frac{45x^2}{x-9} \cdot \frac{x^2-5x-36}{3x^3+12x^2}$
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$$5. \frac{45x^2(x-9)(x+4)}{(x-9)(3x^2)(x+4)} = \frac{45x^2}{3x^2} = 15$$



Answer: 15	$\frac{3x^2 - 25x - 18}{27x + 18} \div \frac{5x - 3}{5x^2 - 33x + 18}$
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$$6. \frac{(3x^2 - 27x)(x+2)(x-18)}{3x(x-9)2(x-9)} = \frac{(3x+2)(x-9) \cdot (5x-3)(x-6)}{9(3x+2) \cdot (5x-3)(x-6)} = \frac{(x-9)(x-6)}{9(x-9)}$$

Answer:

$$\frac{(x-9)(x-6)}{9}$$

$$\frac{\frac{a}{25} - \frac{a}{5}}{a}$$

7.
$$\frac{\frac{a}{25} - \frac{a(5)}{25}}{\frac{a}{1}} = \frac{a-5a}{25} = \frac{-4a}{25} \cdot \frac{1}{a} = \frac{-4}{25}$$

Answer:

$$-\frac{4}{25}$$

$$\frac{\frac{m-1}{m+1}}{\frac{2}{m+1} + \frac{4}{m-1}}$$

8.
$$\frac{\frac{m-1}{m+1}}{\frac{2(m-1)+4(m+1)}{(m+1)(m-1)}} = \frac{m-1}{m+1} \cdot \frac{(m+1)(m-1)}{2m-2+4m+4} = \frac{(m-1)(m-1)}{6m+2}$$

Answer:

$$\frac{m^2 - 2m + 1}{6m + 2}$$

$$\frac{9r^3 - 54r^2}{9r^2 + 45r} \cdot \frac{9r^2 + 9r}{9r^3 - 54r^2}$$

9.
$$\frac{9r^2(r-6)}{9r(r+5)} \cdot \frac{9r(r+1)}{9r^2(r-6)} = \frac{r+1}{r+5}$$

Answer:

$$\frac{r+1}{r+5}$$

$$\frac{4}{m^2} + \frac{3}{2}$$

$$\frac{9}{2} - \frac{5}{m}$$

10. $\frac{4}{m^2} + \frac{3}{2} = \frac{8 + 3m^2}{2m^2} = \frac{3m^2 + 8}{2m^2} \cdot \frac{2m}{2m} = \frac{3m^2 + 8}{m(2m)}$
 $\frac{9}{2} - \frac{5}{m} = \frac{9m - 10}{2m} = \frac{3m^2 + 8}{2m^2} \cdot \frac{2m}{2m} = \frac{3m^2 + 8}{m(2m)}$

Answer:

$$\frac{8 + 3m^2}{9m^2 - 10m}$$

$$\frac{b^2 - 2b - 15}{8b + 20} \div \frac{2}{4b + 10}$$

11. $\frac{(b-5)(b+3)}{4(2b+5)} \cdot \frac{2(2b+5)}{2} = \frac{(b-5)(b+3)}{4}$

Answer:

$$\frac{(b+3)(b-5)}{4}$$

End!