

Algebra II 8.5 Part 3 - Extra Practice

Find the least common denominator.

3. $\frac{3x}{x-2}, \frac{2}{x^2-4}$

$$\frac{3x}{x-2}$$

$$\frac{2}{x^2-4}$$

$$\frac{3x}{x-2}$$

$$\frac{2}{(x-2)(x+2)}$$

LCD: $(x-2)(x+2)$

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Perform the indicated operation and simplify.

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

$$\frac{x}{(x-1)(x-3)} + \frac{5}{(x-3)} \cdot \frac{(x-1)}{(x-1)}$$

$$\frac{x + (5x - 5)}{(x-1)(x-3)} = \boxed{\frac{6x - 5}{(x-1)(x-3)}}$$

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Perform the indicated operation and simplify.

$$12. \frac{x-2}{x^2+x-12} + \frac{x}{x^2-2x-3}$$

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

$$\frac{(x^2-x-2) + (x^2+4x)}{(x+4)(x-3)(x+1)} = \frac{2x^2+3x-2}{(x+4)(x+1)(x-3)}$$

$$= \frac{(x+2)(2x-1)}{(x+4)(x+1)(x-3)}$$

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Simplify the complex fraction.

$$13. \frac{\frac{2}{x} + \frac{3}{x-1}}{\frac{1}{2x-2}} = \frac{\frac{2}{x} + \frac{3}{x-1}}{\frac{1}{2(x-1)}}$$

$$\frac{(x-1)2}{(x-1)x} + \frac{3}{x-1} \cdot \frac{x}{x}$$

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

$$\frac{5x-2}{x(x-1)}$$

$$\frac{5x-2}{x(x-1)}$$

$$\frac{1}{2(x-1)}$$

$$\frac{(5x-2)(2)(x-1)}{x(x-1) \cdot 1}$$

$$\frac{2(5x-2)}{x}$$