

NAME: \_\_\_\_\_

*P.I. A2.A.16: Perform arithmetic operations with rational expressions and rename to lowest terms*

Simplify:

$$1. \frac{x^2 - x - 2}{x^2 + 10x + 9} - \frac{1}{x + 9}$$

$$2. \frac{x^2 - 7x - 8}{x^2 + 7x + 6} - \frac{1}{x + 6}$$

$$3. \frac{x^2 - 1}{x^2 + 6x + 5} - \frac{1}{x + 5}$$

$$4. \frac{x^2 + x}{x^2 + 3x + 2} - \frac{1}{x + 2}$$

Subtract:

$$5. \frac{x - 3}{x^2 + 5x + 4} - \frac{x - 2}{x^2 - 1}$$

$$[A] \frac{2x^2 - 6x + 11}{(x + 4)(x - 1)(x + 1)}$$

$$[B] \frac{2x^2 - 2x - 5}{(x + 4)(x - 1)(x + 1)}$$

$$[C] \frac{-6x + 11}{(x + 4)(x - 1)(x + 1)}$$

$$[D] \frac{-2x - 5}{(x + 4)(x - 1)(x + 1)}$$

$$6. \frac{x + 1}{x^2 - 5x + 6} - \frac{x + 4}{x^2 - 9}$$

$$[A] \frac{2x + 11}{(x - 2)(x + 3)(x - 3)}$$

$$[B] \frac{6x - 5}{(x - 2)(x + 3)(x - 3)}$$

$$[C] \frac{2x^2 + 2x + 11}{(x - 2)(x + 3)(x - 3)}$$

$$[D] \frac{2x^2 + 6x - 5}{(x - 2)(x + 3)(x - 3)}$$

$$7. \frac{x + 4}{x^2 - x - 2} - \frac{x - 3}{x^2 - 4}$$

$$[A] \frac{2x^2 + 4x + 5}{(x + 1)(x + 2)(x - 2)}$$

$$[B] \frac{8x + 11}{(x + 1)(x + 2)(x - 2)}$$

$$[C] \frac{4x + 5}{(x + 1)(x + 2)(x - 2)}$$

$$[D] \frac{2x^2 + 8x + 11}{(x + 1)(x + 2)(x - 2)}$$

Add:

$$8. \frac{4}{x} - \frac{2}{x + 2} + \frac{3}{x(x + 2)}$$

$$9. \frac{2}{x - 2} - \frac{4}{x} + \frac{4}{x(x - 2)}$$

$$10. \frac{2}{x + 1} - \frac{3}{x} + \frac{1}{x(x + 1)}$$

[1]  $\frac{x-3}{x+9}$  \_\_\_\_\_

[2]  $\frac{x-9}{x+6}$  \_\_\_\_\_

[3]  $\frac{x-2}{x+5}$  \_\_\_\_\_

[4]  $\frac{x-1}{x+2}$  \_\_\_\_\_

[5] C \_\_\_\_\_

[6] A \_\_\_\_\_

[7] B \_\_\_\_\_

[8]  $\frac{2x+11}{x(x+2)}$  \_\_\_\_\_

[9]  $\frac{-2x+12}{x(x-2)}$  \_\_\_\_\_

[10]  $\frac{-x-2}{x(x+1)}$  \_\_\_\_\_