

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

*P.I. A2.A.17: Simplify complex fractional expressions*

Simplify:

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

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

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

[C]  $\frac{x}{x^2 - 1}$

[D]  $\frac{1}{x + 1}$

$$2. \frac{x + \frac{8}{x^2}}{x - \frac{16}{x^3}}$$

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

[B]  $\frac{x}{x^2 - 4}$

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

[D]  $\frac{1}{x - 2}$

$$3. \frac{x + y}{xy^{-1} - x^{-1}y}$$

$$4. \frac{x + 3y}{xy^{-1} - 9x^{-1}y}$$

$$5. \frac{x^{-3} - 8xy^{-1}}{-3x^{-4} - x^{-3}y^{-2}}$$

$$6. \frac{x^{-5} - 9xy^{-3}}{-5x^{-6} + x^{-5}y^{-4}}$$

$$7. (x + 6y)(xy^{-1} - 36x^{-1}y)^{-1}$$

$$8. (x + 4y)(xy^{-1} - 16x^{-1}y)^{-1}$$

9. Simplify. Write the answer as a simple fraction with all exponents positive.

$$\frac{c^{-2} + d^3c^{-3}}{c^{-2}d^5}$$

10. Simplify. Write the answer as a simple fraction with all exponents positive.

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

[1]  $\frac{B}{\quad}$

[2]  $\frac{C}{\quad}$

[3]  $\frac{\frac{xy}{x-y}}{\quad}$

[4]  $\frac{\frac{xy}{x-3y}}{\quad}$

[5]  $\frac{\frac{xy^2-8x^5y}{-3y^2-x}}{\quad}$

[6]  $\frac{\frac{xy^4-9x^7y}{-5y^4+x}}{\quad}$

[7]  $\frac{\frac{xy}{x-6y}}{\quad}$

[8]  $\frac{\frac{xy}{x-4y}}{\quad}$

[9]  $\frac{\frac{c+d^3}{cd^5}}{\quad}$

[10]  $\frac{\frac{m+n^2}{mn^4}}{\quad}$