

Name _____

Geometry Rational Expressions Study Guide

Directions: Factor completely. Write the letter for the corresponding answers from the provided answer bank.

1) $15x^2 + 4x - 32$

2) $x^2 - 10x + 16$

3) $x^4 - 1$

4) $x^3 - 4x^2 + 3x - 12$

5) $5x^3 - 50x^2 + 5x - 50$

6) $x^2 + 7x - 60$

7) $18x^2 - 51x - 42$

8) $49x^2 - 36$

9) $5x^3 - 25x^2 + 20x$

10) $70x^2 + 11x - 3$

Directions: Simplify completely. Select the expression that represents the simplified form.

11) $\frac{x^2-4x-5}{3x^2+x-2}$

A) $\frac{1}{x-5}$

B) $x+1$

C) $\frac{x-5}{3x-2}$

D) $\frac{x+5}{3x+2}$

12) $\frac{5x^7y^3}{20xy^5}$

A) $\frac{x^6}{4y^2}$

B) $\frac{4x}{y^3}$

C) $\frac{x^7}{4y^2}$

D) $\frac{x^6}{4xy}$

13) $\frac{x^2-12x+36}{2x^2+13x-7} \div \frac{10x-60}{8x-4}$

A) $\frac{(x-4)}{4(x+10)}$

B) $\frac{(2x+1)(x-3)}{x+7}$

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

D) $\frac{2(x-6)}{5(x+7)}$

14) $\frac{-5x-2}{x^2+4x-60} + \frac{2(3x-2)}{x^2+4x-60}$

A) $5x-3$

B) $\frac{3x-2}{x+12}$

C) $\frac{-11x-6}{(x-6)(x-10)}$

D) $\frac{1}{x+10}$

15) $\frac{9x^2-16}{3x^3+4x^2+6x+8} * \frac{x^4-4}{x-2}$

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

B) $\frac{(3x-4)(x^2-2)}{x-2}$

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

D) $\frac{4x-1}{x+5}$

$$16) \frac{5x+17}{2x^2+15x+28} - \frac{3x+10}{2x^2+15x+28}$$

$$A) \frac{1}{x+4}$$

$$B) \frac{2x-27}{(2x+1)(x-5)}$$

$$C) \frac{1}{2x+7}$$

$$D) \frac{2x}{x+11}$$

$$17) \frac{10x+6}{x^2+4x-5} - \frac{4x+3}{x^2+4x-5} - \frac{x+8}{x^2+4x-5}$$

$$A) \frac{x+1}{x-1}$$

$$B) \frac{5x}{x-1}$$

$$C) \frac{5}{x+5}$$

$$D) \frac{5x-5}{x+5}$$

$$18) \frac{\frac{x^2-5x-36}{x^2-2x-24}}{\frac{x^2-x-72}{x^2+7x-8}}$$

$$A) \frac{x-6}{x+2}$$

$$B) \frac{(x-8)(x-1)}{(x+4)(x+8)}$$

$$C) \frac{x-1}{x-6}$$

$$D) \frac{x+4}{(x-9)(x-6)}$$

$$19) \frac{(x+4)^6}{(x-1)^2} * \frac{(x-1)^2}{(x+4)^2} * \frac{(x-1)^2}{(x+4)^4}$$

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

$$B) \frac{(x+4)^2}{x}$$

$$C) \frac{x-1}{x+4}$$

$$D) (x-1)^2$$

$$20) \frac{(x+4)(x-6)}{(2x-7)(3x-16)} * \frac{(3x-16)(x+4)}{(x-6)(x+8)} \div \frac{(x+4)}{(2x-7)(x+8)}$$

$$A) x+4$$

$$B) \frac{x-6}{(x+4)}$$

$$C) x-6$$

$$D) \frac{(2x-7)(x+8)}{3x-16}$$

Answer Bank for Questions 1-10. Select all that apply. Each answer will only be used once. There will be some unused solutions in the answer bank.

<p>Bubble "A" for any of these solutions.</p> <p>8</p> <p>$x - 4$</p> <p>$x - 1$</p> <p>$x + 1$</p> <p>$x - 1$</p> <p>5</p> <p>$x - 4$</p>	<p>Bubble "B" for any of these solutions.</p> <p>$3x + 2$</p> <p>$x + 11$</p> <p>$10x + 3$</p> <p>$x + 12$</p> <p>$7x - 6$</p> <p>$5x + 8$</p> <p>$5x$</p>
<p>Bubble "C" for any of these solutions.</p> <p>$x^2 + 1$</p> <p>$2x - 7$</p> <p>$x^2 + 1$</p> <p>3</p> <p>$x - 10$</p> <p>$5x - 6$</p> <p>$3x - 4$</p>	<p>Bubble "D" for any of these solutions.</p> <p>$x - 2$</p> <p>$x^2 + 3$</p> <p>$4x$</p> <p>$x - 5$</p> <p>$x - 8$</p> <p>$7x - 1$</p> <p>$7x + 6$</p>