

Quiz Review
1.13-1.16

Simplify each rational expression. State the excluded values.

1. $\frac{x^2 + 12x + 36}{x^2 - 36}$

2. $\frac{x^2 - 8x + 16}{x^2 - x - 12}$

3. $\frac{x^3 + 27}{x^2 + 6x + 9} \cdot \frac{1}{x + 3}$

4. $\frac{2x^2 + 7x + 3}{x - 4} \cdot \frac{x^2 - 16}{x^2 + 8x + 15}$

5. $\frac{x^2 - 9}{2x^2 - 5x + 2} \div \frac{x^2 + 6x + 9}{2x^2 + 5x - 3}$

6. $\frac{x^2 - 4}{4x^2} \cdot \frac{2x^2 - 8}{x^2 + 4x + 4}$

$$7. \frac{8}{x+1} - \frac{5x}{x-7}$$

$$8. \frac{3x}{25x^2-9} + \frac{x}{5x-3}$$

$$9. \frac{2}{x^2-9} + \frac{3x}{x^2-5x+6}$$

$$10. \frac{\frac{x}{x+2}}{\frac{1}{x}}$$

$$11. \frac{\frac{12}{x}}{\frac{16}{x^2}}$$

$$12. \frac{\frac{2x}{x+3}}{\frac{5}{x^2-9}}$$

Answers

1. $\frac{x+6}{x-6}$, $x \neq -6, 6$

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

3. $\frac{x^2 - 3x + 9}{(x+3)(x+3)}$, $x \neq -3$

4. $\frac{(2x+1)(x+4)}{x+5}$, $x \neq -3, -5, 4, -4$

5. $\frac{x-3}{x-2}$, $x \neq -3, \frac{1}{2}, 2$

6. $\frac{(x-2)(x-2)}{2x^2}$, $x \neq 0, -2, 2$

7. $\frac{-5x^2 + 3x - 56}{(x+1)(x-7)}$, $x \neq -1, 7$

8. $\frac{5x^2 + 6x}{(5x-3)(5x+3)}$, $x \neq -\frac{3}{5}, \frac{3}{5}$

9. $\frac{3x^2 + 11x - 4}{(x-3)(x+3)(x-2)}$, $x \neq 3, -3, 2$

10. $\frac{x^2}{x+2}$, $x \neq 0, -2$

11. $\frac{3x}{4}$, $x \neq 0$

12. $\frac{2x(x-3)}{5}$, $x \neq -3, 3$