

Simplify. **SHOW ALL WORK** and be sure all answers are **REDUCED**.
For problems 1-3, name all restrictions on the variables.

1. $\frac{21x^2y^4}{4x^3} \cdot \frac{x^3y^2}{35xy^3}$

1. _____

Restrictions

2. $\frac{4x+8}{5x-20} \div \frac{10+3x-x^2}{x^2-4x}$

2. _____

Restrictions

3. $\frac{2x^2-x-1}{3x^2-2x-1} \div \frac{4x^2-1}{15x^3+5x^2}$

3. _____

Restrictions

4. $\frac{8x^{-2}}{21y^{-5}} \div \frac{2x^3}{9y}$

4. _____

5. $\frac{4x-8y}{x^2-xy-6y^2} \cdot \frac{x^2-9y^2}{x^3+x^2y-6xy^2}$

5. _____

6. $\frac{-2x-5}{\frac{x^2-1}{x+1}} \cdot \frac{x^2-1}{2x^2-x-15}$
 $\frac{x-3}{x-3}$

6. _____

$$7. \frac{2x-1}{x+8} + \frac{34x}{x^2-64}$$

7. _____

$$8. \frac{4x}{x^2-16} - \frac{6}{4-x}$$

8. _____

$$9. \frac{2x-1}{x+5} + \frac{x}{x-2} - \frac{5x+4}{x^2+3x-10}$$

9. _____

$$10. \frac{\frac{2}{x+5}}{x-5} + \frac{\frac{5x-10}{x-5}}{\frac{x^2+3x-10}{2}}$$

10. _____

$$11. \frac{3 + \frac{5}{3x}}{2 + \frac{4}{x}}$$

11. _____

Solve each equation.

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

12. _____

13. $\frac{3w-6}{4} - \frac{w+6}{6} + \frac{2w}{3} = 5$

13. _____

14. $\frac{3}{x-2} - \frac{6}{x^2-2x} = 1$

14. _____

15. $\frac{x}{x^2-1} + \frac{2}{x+1} = \frac{1}{2x-2}$

15. _____

16. $\frac{2}{x+3} - \frac{3}{4-x} = \frac{2x-2}{x^2-x-12}$

16. _____

17. $\frac{2}{x} + \frac{1}{x+2} = \frac{1}{4}$

17. _____

Algebra 2
Review Sheet 8.4-8.6
Answers

1. $\frac{3xy^3}{20^0}$ $x \neq 0, y \neq 0$

2. $\frac{4x}{-5(x-5)}$ $x \neq 4, 5, -2, 0$

3. $\frac{5x^2}{2x-1}$ $x \neq -\frac{1}{2}, 1, \frac{1}{2}, -\frac{1}{2}, 0$

4. $\frac{12y^6}{7x^5}$

12. $x = \frac{5}{2}, -\frac{3}{2}$

5. $\frac{4}{x(x+2y)}$

13. $w = 6$

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

14. $x = 3$

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

15. no solution

8. $\frac{2(5x+12)}{(x+4)(x-4)}$

16. $x = -1$

9. $\frac{3x+1}{x+5}$

17. $11.40, -1.40$

10. $\frac{2}{x-5}$

11. $\frac{9x+5}{6(x+2)}$