

Practice Worksheet

Multiplying and Dividing Rational Expressions

Simplify each expression.

1. $\frac{a+y}{6} \cdot \frac{4}{y+a}$

2. $\frac{a-y}{w+n} \cdot \frac{w^2-n^2}{y-a}$

3. $\frac{x^2-5x-24}{6x+2x^2} \cdot \frac{5x^2}{8-x}$

4. $\frac{n^5}{n-6} \cdot \frac{n^2-6n}{n^3}$

5. $\frac{a^5y^3}{wy^7} \div \frac{a^3w^2}{w^3y^2}$

6. $\left(\frac{2xy}{w^2}\right)^3 \div \frac{24x^2}{w^5}$

7. $\frac{x+y}{6} \div \frac{x^2-y^2}{3}$

8. $\frac{3x+6}{x^2-9} \div \frac{6x^2+12x}{4x+12}$

9. $\frac{\frac{x^2-9}{4}}{\frac{3-x}{8}}$

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

11. $\frac{\frac{y^4-81}{xy+4y+3x+12}}{y^2+9}$

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

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Simplify each expression.

1. $\frac{a+y}{6} \cdot \frac{4}{y+a} \frac{2}{3}$

2. $\frac{a-y}{w+n} \cdot \frac{w^2-n^2}{y-a} n-w$

3. $\frac{x^2-5x-24}{6x+2x^2} \cdot \frac{5x^2}{8-x} - \frac{5x}{2}$

4. $\frac{n^5}{n-6} \cdot \frac{n^2-6n}{n^8} \frac{1}{n^2}$

5. $\frac{a^5y^3}{wy^7} \div \frac{a^3w^2}{w^6y^2} \frac{a^2w^2}{y^2}$

6. $\left(\frac{2xy}{w^2}\right)^3 \div \frac{24x^2}{w^5} \frac{xy^3}{3w}$

7. $\frac{x+y}{6} \div \frac{x^2-y^2}{3} \frac{1}{2(x-y)}$

8. $\frac{3x+6}{x^2-9} \div \frac{6x^2+12x}{4x+12} \frac{2}{x(x-3)}$

9. $\frac{\frac{x^2-9}{4}}{\frac{3-x}{8}} - 2(x+3)$

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

11. $\frac{\frac{y^4-81}{xy+4y+3x+12}}{y^2+9} \frac{y-3}{x+4}$

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