

Objectives

- Simplify rational expressions
- Simplify rational expressions by multiplying and dividing



Rational Expressions

1. If the denominator does not equal 0, which express is equivalent to

$$\frac{x^2 - 4x - 5}{x^2 - 9x + 20}$$

A. $\frac{x-1}{x-4}$

B. $\frac{x-1}{x+4}$

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

D. $\frac{x+1}{x+4}$

2. Simplify: $\frac{x(x-3)(x+6)}{x^2 + x - 12}$

A. $\frac{x(x-3)}{x-2}$

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

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

D. $\frac{x(x-3)}{x-4}$

3. Simplify: $\frac{x^2(x-4)(x+2)}{6x(x^2 + x - 20)}$

A. $\frac{x(x-4)}{6(x-10)}$

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

C. $\frac{x(x+2)}{6(x-5)}$

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

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

A. $\frac{(x-3)(x-z)}{4}$

B. $\frac{(x+3)(x-z)}{4}$

C. $\frac{(x+3)(x+z)}{4}$

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

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5. Simplify: $\frac{x^2 - 5x - 14}{28 + 3x - x^2}$

A. $\frac{x+2}{x+7}$

B. $-\frac{x+2}{x+7}$

C. $\frac{x+2}{x+4}$

D. $-\frac{x+2}{x+4}$

6. Simplify: $\frac{9x^2 - x^3}{x^2 - 3x - 54}$

A. $\frac{x^2}{x+6}$

B. $-\frac{x^2}{x+6}$

C. $\frac{x^2}{x+18}$

D. $-\frac{x+3}{x+6}$

7. Perform the indicated operations and write the answer in the simplest form : $\left(-\frac{ab^2}{125} \div \frac{12a^3b}{25}\right) \times \left(-\frac{75a}{4b^2}\right) = \dots$ where $a \neq 0, b \neq 0$

A. $\frac{5}{16ab}$

B. $-\frac{9a^5b}{125}$

C. $\frac{b^3}{1125a^3}$

D. $-\frac{5a^2b^2}{16a^3b^3}$