

Xavier University of Louisiana

Study Guide for the Xavier Mathematics Placement Test

5. Operations on and simplification of rational expressions

Practice Problems

Reduce to lowest terms:

1. $\frac{36x^5y^4z^3}{18x^5y^2z^6}$

2. $\frac{5(x^2 - 9)}{10(x + 3)}$

3. $\frac{6(x^2 + 2x + 1)}{27(x^2 - x - 2)}$

Perform the operations and simplify the result:

1. $\frac{3(x^2 - 9)}{x - 1} \cdot \frac{x^2 - x}{9(x^2 - 6x + 9)}$

2. $\frac{4(x^2 - 16)}{x + 5} \div \frac{2(x^2 + 8x + 16)}{x^2 + 5x}$

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

4. $\frac{\frac{4}{x - 5} - \frac{4}{x + 5}}{\frac{4}{x - 5} + \frac{4}{x + 5}}$

5. $\left(\frac{(x^4y^2)^2}{x^4y}\right)^3$