Simplifying Rational Expressions

Step 1: Factor numerator and denominator completely.

Step 2: Cancel common factors.

Directions: Simplify each rational expression.

1. $\dfrac{18x^4}{60x^6}$

2. $\dfrac{3x^4 y}{xy - y}$

3. $\dfrac{-5x^2 - 15}{4x^2 + 12}$

4. $\dfrac{24 - 6x}{x^3 - 4x^2}$

5. $\dfrac{2x^2 - 72}{3x + 18}$

6. $\dfrac{x^2 + 2x - 35}{x^2 + 19x + 84}$

7. $\dfrac{30-11x+x^2}{x^2-x-30}$

8. $\dfrac{3x^3+24x^2+4x+32}{x^3+512}$