Simplify Rational Expressions:

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

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

$$\frac{x^2(x+2)(x-4)}{6x(x^2+x-20)}$$

$$\frac{y^2(y^2+3y+2)}{2y(y-4)(y+2)}$$

$$\frac{(x^2-16x+64)(x+2)}{(x^2-64)(x^2-6x-16)}$$

$$\frac{3y(y-8)(y^2+2y-24)}{15y^2(y^2-12y+32)}$$

Identify excluded values:

An excluded value is when:_____

Multiply and Divide Rational Expressions:

$$\frac{3ac^3f^3}{8a^2bcf^4} \cdot \frac{12ab^2c}{18ab^3c^2f}$$

$$\frac{64a^2b^5}{35b^2c^3f^4} \div \frac{12a^4b^3c}{70abcf^2}$$

$$\frac{15a^2b^2}{21ac} \cdot \frac{14a^4c^2}{6ab^3}$$

$$\frac{y^2+8y+15}{y-6} \cdot \frac{y^2-9y+18}{y^2-9}$$

$$\frac{x^2+9x+20}{8x+16} \cdot \frac{4x^2+16x+16}{x^2-25}$$

$$\frac{14xy^2z^3}{21w^4x^2yz} \cdot \frac{7wxyz}{12w^2y^3z}$$

$$\frac{9x^2yz}{5z^4} \div \frac{12x^4y^2}{50xy^4z^2}$$

$$\frac{14c^2f^5}{9a^2} \div \frac{35cf^4}{18ab^3}$$

$$\frac{c^2 - 6c - 16}{c^2 - d^2} \div \frac{c^2 - 8c}{c + d}$$

$$\frac{3a^2 + 6a + 3}{a^2 - 3a - 10} \div \frac{12a^2 - 12}{a^2 - 4}$$