

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

Cancel out the expressions that has common on both numerator and denominator, as follows,

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

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

or

$$\frac{x^2+1}{x^4-x^3}$$

Therefore, simplifying further the given problem, the result is

$$\frac{x^2+1}{x^4-x^3}.$$

3. Find the quotient of the following: $\frac{(x^2-1)^2}{x(x+1)} \div \frac{x(x^2-1)}{(x+1)^2}.$

Solution:

$$\frac{(x^2-1)^2}{x(x+1)} \div \frac{x(x^2-1)}{(x+1)^2}$$

Take the reciprocal of the second term, then proceed to multiplication, so we have,

$$\frac{(x^2-1)^2}{x(x+1)} \cdot \frac{x(x^2-1)}{(x+1)^2}$$