Algebra 1

Chapter 11

Section 11-2

Simplify the rational expression.

$$\frac{x^5 - 2x^4}{x^4 - x^2}$$

$$\rightarrow \frac{x^4(x-2)}{x^2(x^2-1)} = \frac{x^2(x-2)}{(x+1)(x-1)}$$

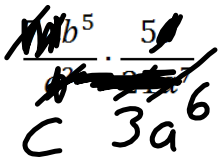
$$\rightarrow x^2(x+1)(x-1)$$

Multiply the rational expressions.

$$\frac{11}{5b} \cdot \frac{-3}{9b^3}$$

$$\frac{11}{5b} \cdot \frac{-1}{3b^3} = \frac{-11}{15b^4}$$

Multiply the rational expressions.



$$\frac{5b^5}{3a^6c}$$

Multiply the rational expressions.

$$\frac{x-7}{x^2+3x-10} \cdot \frac{3x-9}{3x-21}$$

$x-7$ | $x^2+3x-10$ | $3x-9$ | $3x-21$

$(x+5)(x-2)$ | $3(x-3)$ | $3(x-7)$

$$\frac{x-7}{(x+5)(x-2)} \cdot \frac{3(x-3)}{3(x-7)}$$

$$\frac{x-3}{(x+5)(x-2)}$$

Multiply the rational expressions.

$$\frac{b^2+3b+2}{b^2+3b-4}\cdot\frac{3b^2-4b+1}{3b^2+5b-2}$$

3 / −1, −3   −6 / −1, 6

b^2+3b+2
$(b+1)(b+2)$

b^2+3b-4
$(b-1)(b+4)$

$3b^2-4b+1$
$3b^2-1b-3b+1$
$b(3b-1)-1(3b-1)$
$(3b-1)(b-1)$

$3b^2+5b-2$
$3b^2-1b+6b-2$
$b(3b-1)+2(3b-1)$
$(3b-1)(b+2)$

$$\frac{(b+1)(b+2)}{(b-1)(b+4)}\cdot\frac{(3b-1)(b-1)}{(3b-1)(b+2)}$$

$$\frac{b+1}{b+4}$$

Divide the rational expressions.

$$\frac{12b^2+9b}{5b-15} \div \frac{b^2-3b}{b^2-9b^3}$$

Flip & multiply

$$\frac{12b^2+9b}{5b-15} \cdot \frac{b^2-9b^3}{b^2-3b}$$

$12b^2+9b = 3b(4b+3)$

$5b-15 = 5(b-3)$

$b^2-9b^3 = b^2(1-9b)$

$b^2-3b = b(b-3)$

$$\frac{3b(4b+3)}{5(b-3)} \cdot \frac{b^2(1-9b)}{b(b-3)}$$

$$\frac{3b^2(4b+3)(1-9b)}{5(b-3)^2}$$