

Factor by Grouping

a. $\frac{2x^3}{2x^2} - \frac{10x^2}{2x^2} \ominus \frac{3x}{-3} + \frac{15}{-3}$ $2x^2(x-5)$

$$2x^2(x-5) - 3(x-5)$$

$$(x-5)(2x^2-3)$$

b. $\frac{12x^3}{3x^2} + \frac{15x^2}{3x^2} \ominus \frac{8x}{-2} - \frac{10}{-2}$

$$3x^2(4x+5) - 2(4x+5) \rightarrow (3x^2-2)(4x+5)$$

$$(4x+5)(3x^2-2)$$

c. $\frac{21x^3}{7x^2} - \frac{5(6x^2)}{7x^2} \pm \frac{9x}{3} - \frac{24}{3}$

$$\frac{7x^2(3x-8)}{(3x-8)} + \frac{3(3x-8)}{(3x-8)}$$

$$(3x-8)(7x^2+3)$$

d. $\frac{22x^3}{11x^2} + \frac{77x^2}{11x^2} \ominus \frac{18x}{-9} - \frac{63}{-9}$

$$11x^2(2x+7) - 9(2x+7)$$

$$(2x+7)(11x^2-9)$$

e. $\frac{54x^3}{2x^2} - \frac{10x^2}{2x^2} \ominus \frac{27x}{-1} + \frac{5}{-1}$

$$2x^2(27x-5) - 1(27x-5)$$

$$(27x-5)(2x^2-1)$$