FACTORING \* First Step - Pull out common factors 2 terms - look for perfect squares or perfect cubes  $(a_x-5)(a_x-5)$  $a^2 - b^2 = (a+b)(a-b)$ a + b = not factorable 4x2+25  $a^{3} - b^{3} = (a - b)(a^{2} + ab + b^{2})$  $50y^{7} - 18x^{2}$ =  $2(a5y^{7} - 9x^{2})$  $a^{3} + b^{3} = (a + b)(a^{2} - ab + b^{2})$  $\chi^{3} - 8 = (\chi - 2)(\chi^{2} + 2\chi + 4) = 2(5\chi^{2} + 3\chi)(5\chi^{2} - 3\chi)$ 3p3+192  $= 3(p^{3}+64)$  $3(p+4)(p^2-4p+16)$ 

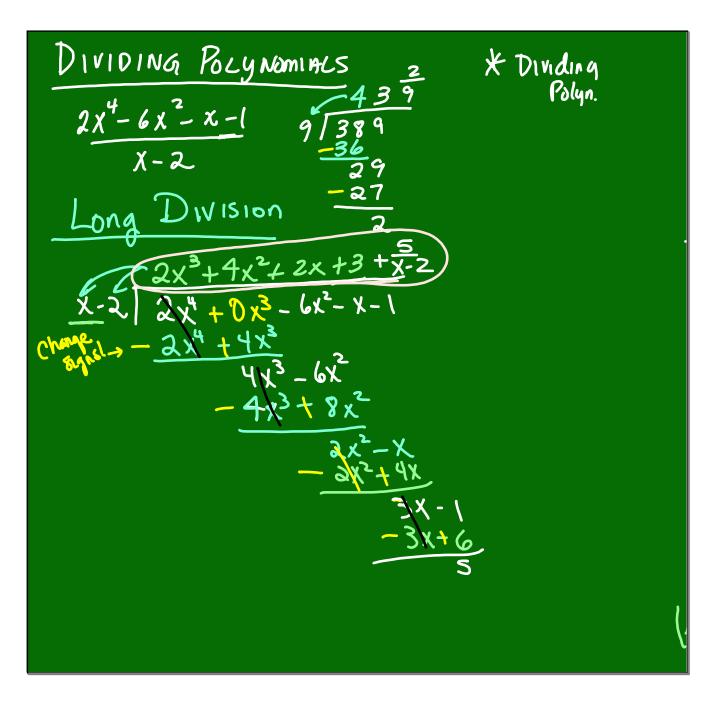
$$\frac{3 + erms - UNFOIL}{x^{2} + 2x - 15}$$

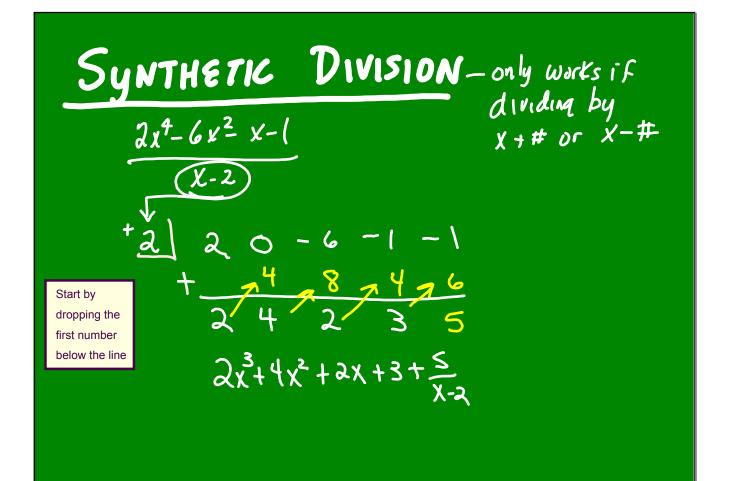
$$\frac{4 + 5i(x - 3)}{(x + 5)(x - 3)}$$

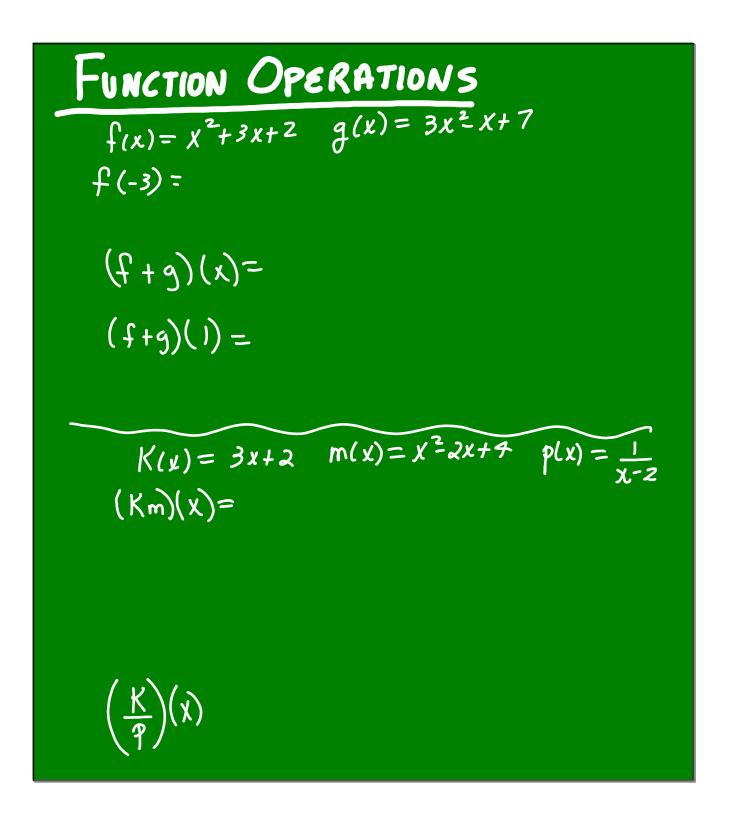
$$\frac{4 + erms - GROUPING}{(3x^{3} + 15x)(2x - 10)}$$

$$\frac{3}{2} Pall out the group
Common quartity
1) 3x^{2}(x + 5) - 2(x + 5) = must get same
guantity in both groups
$$\frac{12x^{3}y - 9x^{3}y + 2ixy - 7y}{y(i2x^{3} - 9x^{2} + 2ix - 7)}$$

$$\frac{y(2x + 3iy - 9x^{2} + 2ix - 7)}{y(3x - 1)(4x^{2} + 7)}$$$$







Composition of Functions - Function in a function  $f(x) = 3x + 2 \quad g(x) = x^{2} = 2x + 1 \quad h(x) = \frac{3x^{2} + 2}{x^{2} - 1} \quad K(x) = \sqrt{2x + 1}$   $f\left[g(x)\right] = f\left[g(x)\right]$ 

