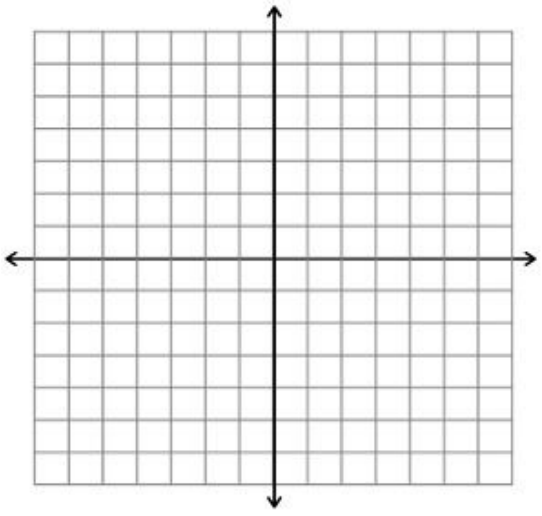
A2C Long Division	Name
1. Divide using LONG DIVISION: SHOW ALL WORK NEATLY. $(2x^3 - 1)/(2x + 4)$	2. Divide using LONG DIVISION: SHOW ALL WORK NEATLY. $(x^4 - 2x^3 + 3x^2 - 4x + 6)/(x^2 + 2x - 1)$
3. Divide using LONG DIVISION: SHOW ALL WORK NEATLY. $(x^4 - 3x^3 + 6x^2 - 3x + 5)/(x^2 + x)$	4. Divide using LONG DIVISION: SHOW ALL WORK NEATLY. $\frac{x^3 - 3x + 2x^4}{2x - 3}$
5. Divide with long division: $\frac{3x^3 - 5x^2 + 4x - 2}{3x + 1}$	6. Divide using Long Division: $\frac{x^6 + x^4 + x^2 + 1}{x^2 + 1}$

7. Write the equation of a quadratic with zero at -3i.	8. Simplify: $(3-8i)(2i+5) - 2(3+6i)$
9. Factor: $x^2 - 16x$ $x^2 - 16$ $x^2 + 16$	10. Given $f(x) = x^3 - 4x^2 - 7x + 10,$ use synthetic division and factoring to find which of the following are zeros. -5,-2,-1,0,1,2,5
11. If $P(x) = x^4 - 3x^3 + 4x^2 - 12$ Find P(-2)	12. Solve for x: $\frac{x-3}{2a} = a^3 + 4$
13. Given that there is a zero at 2 in $P(x) = x^3 - 4x^2 - 31x + 70$. Use synthetic division to prove that 2 is a zero. Then factor and write as a product of linear factors. P(x)= (x_____)(x_____)(x_____) Zeros are _____, _____, _____	Graph without a calculator #13. Make sure you LABEL the x & y Intercepts. 

14-16 Use your calculator to find an integer zero, then use synthetic division to find the quadratic that goes with it. Use the quadratic Formula to find the EXACT solutions. List all 3 of your solutions. (No decimal answers allowed.)

*14. $f(x) = x^3 + 2x^2 - 5x - 10$

_____,_____,_____

*15. $f(x) = x^3 - 11x^2 + 49x - 75$

_____,_____,_____

16. $f(x) = x^3 - 5x^2 + 3x + 1$

_____,_____,_____

17. WITHOUT A CALCULATOR Graph. Make sure the x and y-intercepts are labeled.

$P(x) = (x-3)(x+7)(x+2)$