

QUIZ #1 REVIEW: POLYNOMIAL OPERATIONS

1) $(x^2 + 7x + 12) \div (x + 3)$

$$\begin{array}{r} x+4 \\ x+3 \overline{) x^2+7x+12} \\ \underline{-x^2+3x} \\ 4x+12 \\ \underline{-4x+12} \\ 0 \end{array}$$

$x+4$

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

** DO NOT forget to fill the blanks with zero terms!*

$$\begin{array}{r} x^2+x+1 \\ x-1 \overline{) x^3+0x^2+0x-1} \\ \underline{-x^3+x^2} \\ x^2+0x \\ \underline{-x^2+x} \\ x-1 \\ \underline{-x+1} \\ 0 \end{array}$$

x^2+x+1

3) $(x+2)(3x^2-2x+11)$

	$3x^2$	$-2x$	$+11$
x	$3x^3$	$-2x^2$	$+11x$
$+2$	$+6x^2$	$-4x$	$+22$

$3x^3 + 4x^2 + 7x + 22$

** FIX! **

4) $(11 - 15x - 7x^2)(25 + 10x - 10x^2)$

	11	$-15x$	$-7x^2$
25	275	$-375x$	$-175x^2$
$+10x$	$+110x$	$-150x^2$	$-70x^3$
$-10x^2$	$-170x^2$	$+240x^3$	$-112x^4$

$112x^4 + 170x^3 - 501x^2 - 265x + 275$

5) Write a quadratic equation that has roots of -1 and 4 in standard form.

$$y = (x+1)(x-4)$$

$$y = x^2 - 4x + x - 4$$

$$y = x^2 - 3x + 4$$

6) Use the following polynomial graph to answer the following:

a) What are the roots?

$$-2, 0, 1$$

b) What are the factors?

$$x(x+2)(x-1)$$

c) What is the equation in factored form?

$$y = x(x+2)(x-1)$$

