Name:_____ Date:_____

Unit 3B Test Review

1) Given the factor (x – 6), what are the other linear factors for the polynomial $f(x) = 2x^3 - 1x^2 - 52x - 84$?

2) What is the y-intercept of the function $f(x) = 4x^3 - 7x^2 + 8x$?

3) Given the polynomial $f(x) = 8x^3 - 125$, what are its factors?

Write the equations of the polynomials given the following zeros:

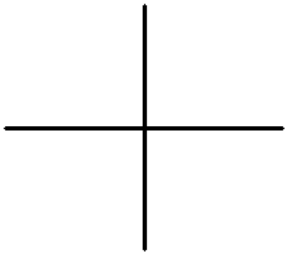
4) $5, \pm 7i$

5) $-3, \sqrt{2}$

6) True or false: Every odd-degree polynomial has at least two imaginary roots.

For 7-8, **give exact answers only.** No Decimals. Write final answer for the zeros, roots, solutions, or factors in the space provided. Draw a sketch showing **all intercepts (x & y)** on 7 & 8.

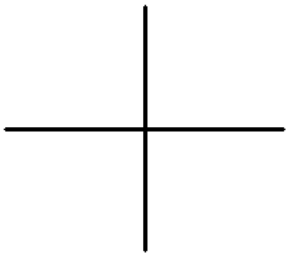
7) $f(x) = x^4 + 4x^3 - 14x^2 - 20x - 3$



x–intercepts & y-intercepts

8) Find all the zeros and sketch a graph:

$f(x) = x^4 - 2x^2 - 8$



Zeros

9) Find all the **linear factors**

$f(x) = 2x^4 - 5x^3 - 17x^2 + 35x + 21$

Factors

10) Find all the **zeros**

$f(x) = x^4 + 3x^3 - 3x^2 - 15x - 10$

Zeros

11) Find all the **roots**

$f(x) = x^3 + 64$

Roots

12) Find all of the **solutions**

$f(x) = x^4 - 2x^3 - 3x^2 + 6x$

Solutions