

SM3-A HW #3-6 (solve poly's using long division) Date _____ Period _____

a) Use Long Division to see if the linear factor $(x + 1)$ divides the polynomials evenly. Show all of your work.

b) Once you have found the quadratic factor, find the rest of the zeroes of the polynomial by finding the zeroes of the quadratic factor.

1) $f(x) = 3x^3 + 7x^2 + 5x + 1$

2) $f(x) = 2x^3 + 7x^2 + 7x + 2$

3) $f(x) = 5x^3 + 9x^2 + 3x - 1$

4) $f(x) = 5x^3 - 19x^2 - 29x - 5$

5) $f(x) = 2x^3 + 5x^2 + 4x + 1$

6) $f(x) = 5x^3 - 19x^2 - 29x - 5$

Find each product.

7) $(6r + 2)(6r^2 + 6r + 5)$

8) $(8n - 5)(n^2 - 4n - 4)$

- (a) Assuming no vertical stretching, write the intercept form polynomial for the given zeroes.
(b) Write the standard form polynomial.

9) $-5, 0, 5$

10) $2, -4, 1$

11) $y = 2 \cdot \left(\frac{1}{3}\right)^x - 3$

a) Domain = ?

b) Range = ?

Write the slope-intercept form of the equation of the line through the given points.

12) through: $(-5, -1)$ and $(3, -5)$

- 13) a) Divide the following polynomial by $(x - 1)$ using LONG DIVISION. Show all your work.
b) Once you have found the quadratic factor, solve it using any of the methods we learned in unit 2.

$$y = 3x^3 - 5x^2 - 11x - 3$$