

SM3 HW #2-8 (solve poly's using division)

Date _____ Period _____

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

1) 4, $-3 + \sqrt{7}$, $-3 - \sqrt{7}$

2) 3, 4, -3, -2

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

a) Domain = ?

b) Range = ?

a) Divide using one of the 3 methods (long division, synthetic division, or box division).**b) Write your answer as quotient plus remainder over divisor.****c) Is the divisor a factor of the polynomial?**

4)
$$\frac{2r^3 - 12r^2 - 57r + 33}{r - 9}$$

5) $(a^3 + 2a^2 - 51a - 24) \div (a + 8)$

Solve each equation by factoring.

6) $6x^2 + 11x - 2 = 0$

7) $2m^2 - 13m - 24 = 0$

State the possible number of real and imaginary zeros for each function. Then find all zeros. If it has a common factor of 'x', what is the first zero. If it doesn't have a common factor of 'x' then try dividing by $x + 1$ or $x - 1$ in order to find the zeroes.

8) $f(x) = x^3 - 15x^2 + 27x - 13$

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

10) $f(x) = x^5 - 10x^3 + 9x$

11) $f(x) = x^5 - 13x^4 + 23x^3 - 11x^2$

Solve each equation.

12) $x^2 - 12x - 61 = 0$

13) $p^2 + 10p - 67 = 0$