

SM3 HW #3-2 (Unit 2 Weak Areas-Part 2)

Period _____

Find all zeros. Show your work.

1) $f(x) = 3x^3 + 10x^2 + 8x$

2) $f(x) = 2x^3 - 7x^2 - 15x$

3) $f(x) = 5x^3 - 27x^2 + 10x$

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

5) $f(x) = x^4 - 15x^2 + 54$

6) $f(x) = x^4 - 2x^2 - 24$

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

8) $f(x) = x^4 - 14x^2 + 45$

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

10) $f(x) = x^4 - x$

11) $f(x) = x^4 + 27x$

12) $f(x) = x^4 - 64x$

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

13) $4, \sqrt{7}, -\sqrt{7}$

14) $3, 4, -3, -2$

**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?**

15) $(9r^3 + 50r^2 + 18r - 45) \div (r + 5)$

16) $(r^3 - 2r^2 + 2r + 5) \div (r + 1)$

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.

17) $f(x) = x^3 - 9x^2 - 21x - 11$

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

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

20) $f(x) = x^3 + 6x^2 - 7x$