

Math 1050 – Sullivan Chapter 5 Lab

Graph functions 1 through 5:

1. $y = -x^3$

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

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

4. $g(x) = \frac{x^2 - x - 2}{x^2 - 4x + 3}$

5. $h(x) = \frac{x^2 - 2x - 8}{x - 1}$

6. How many different ways can we find the remainder of dividing a polynomial $P(x)$ by $(x-r)$? Which of those ways will also give you the answer of the division problem?

7. Divide $4x^4 + 2x^3 - 3x^2 - 2$ by $(x-2)$ and then by $(x+3)$.

8. Is $(x-6)$ a factor of $x^5 - 6x^4 - 4x + 24$?

9. Find the polynomial with lowest degree that has the following as zeros;

a. $-1, 2, \text{ and } \frac{3}{2}$

b. $-3, 2, \text{ and } -i$

10. Find the number of possible positive, negative, and non-real roots for;

a. $2x^4 - 3x^3 + 5x^2 + x - 5 = 0$

b. $x^4 + x^2 + 24,567 = 0$

c. $-x^7 - 5 = 0$

11. Find all the rational roots of;

a. $2x^3 + 17x^2 + 41x + 30 = 0$

b. $3x^3 + 2x^2 + 2x - 1 = 0$

12. How many roots does $5x^3 + 37x^2 + 59x + 18 = 0$ have between;

a. -1 and 0 ?

b. 0 and 1 ?

13. Approximate $\sqrt{11}$ to the nearest tenth.