Name: _____

1.6 Polynomial Graphs

List the degree and find the end behavior of each graph

1. $-x^3 + 3x - 7$

Degree: $\lim_{x\to-\infty}$ $\lim_{x\to\infty}$

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

Degree: $\lim_{x\to-\infty}$ $\lim_{x\to\infty}$

3. $(x-2)(x+7)^3$

Degree: $\lim_{x\to-\infty}$ $\lim_{x\to\infty}$

4. $2x4 - 3x^3 + 2x - 5$

Degree: $\lim_{x\to-\infty}$ $\lim_{x\to\infty}$

Match the polynomial with one of the graphs. Tell your reasoning for each choice.

5. $P(x) = x(x^2 - 4)$

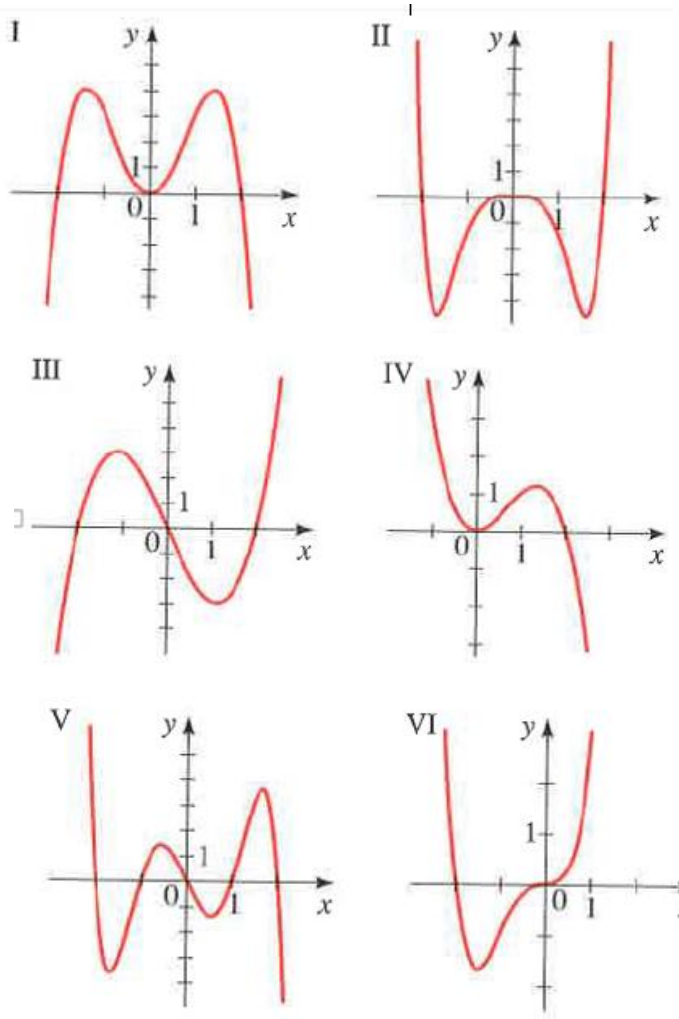
6. $Q(x) = -x^2(x^2 - 4)$

7. $R(x) = -x^5 + 5x^3 - 4x$

8. $S(x) = \frac{1}{2}x^6 - 2x^4$

9. $T(x) = x^4 + 2x^3$

10. $U(x) = -x^3 + 2x^2$



Find all zeros and sketch the graph. Factor if needed

11. $P(x) = x^3 - x^2 - 6x$

12. $P(x) = -x^3 + x^2 + 12x$

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

14. $P(x) = x^4 - 3x^2 - 4$

15. $P(x) = x(x-3)^2(x+2)^3$

16. $-(x-1)^3(x+7)^4(x-3)$