

Name: _____
PC: Sketching Polynomials without a Graphing Calculator

Date: _____
Ms. Loughran

Sketch the general graph of each function without your graphing calculator.

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

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

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

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

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

6. $f(x) = -x^5 + 4x^4 - 4x^3$

Sketch each of the following:

1. $y = x^2$

2. $y = (x - 2)^2$

3. $y = -(x + 3)^2$

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

5. $y = (x + 1)(x - 2)(3 - x)$

6. $y = x(x - 1)^2$

7. $y = -x(x - 2)^2$

8. $y = x^2(x + 2)(x - 2)$

9. $y = x^3(x - 3)$

10. $y = -x(x - 1)(x + 2)$

11. $y = x^3 - 6x^2 + 9x$

12. $y = x^2(x - 4)$

13. $y = (x + 2)^3$

14. $y = x(x - 1)(x - 3)(x + 2)$

15. $y = x(1 - x)(x - 2)(x + 3)$

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

17. $y = x^4 - 5x^2 + 4$

18. $y = 3x^3 - x^4$

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

20. $y = (1 - x)(2 - x)(3 - x)(4 - x)(5 - x)$