Algebra 2   Name: _____
Polynomial Graphs   Period: _____

For each polynomial, identify the degree and the leading coefficient. Then, sketch the end behavior.

1. $a(x) = 4x^3 - 8x^6 + x^2$ 2. $b(x) = 3x^4 - 4x - 6$ 3. $c(x) = -x(x+3)(x-1)$ 4. $d(x) = (x+2)^3(x-7)^2$

Sketch a graph of each polynomial.

5. $f(x) = -(x-3)^2(x+8)(x-6)^2(x+1)$ 6. $g(x) = x^3(x-3)^2(x+4)(x-7)$

7. $h(x) = -2x(x-6)^3(x+4)^3$ 8. $j(x) = 5(x+2)^2(x-8)(x-3)$ 9. $n(x) = (x-5)^3(x+3)^6$

10. $m(x) = -3x(x-4)^2(x+2)^3(x-8)$ 11. $k(x) = 6(2x+1)^5(x-9)^4(2x-7)$

12. Find the equation of a cubic function with roots $x=3$, $x=-2$ and $x=5$ and passes through $(-1,-48)$.

13. Find the equation of a fifth-degree function with roots $x=4$ (double) and $x=\dfrac{1}{2}$ (triple) and passes

through $(0,-32)$.

14. Find the equation of a sixth-degree function with roots $x=-3$ (triple), $x=1$, $x=\dfrac{5}{2}$ and $x=0$ and passes

through $(-1,28)$.