Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Left End & Sneaky Factors (LESF)

Find the roots of the polynomial by setting each factor (parentheses) equal to zero and solving for *x*.

1. $y = (2x - 6)(3x + 6)(x - 6)$

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

3. $y = 3x(7x - 2)(3x + 8)(2x + 5)$

4. $y = (5 - x)(4 + x)(6 - 3x)(1 - 5x)$

5. $y = (5 - 3x)(2x - 5)(x)(3x - 8)$

6. $y = (2x + 7)(3x - 8)(8x + 3)(6 - 2x)(2 + 9x)$

Find the degree of the polynomial. Then find the (possibly hidden) a-value.

7. $f(x) = -3(2x + 5)(x - 7)(3x + 4)$

8. $f(x) = 4x(x + 5)(4x - 1)(x + 5)$

9. $f(x) = (x + 3)^2(x - 5)(7 - x)$

10. $f(x) = x(3x + 2)(4 + 5x)(7 - x)^2$

11. $f(x) = (x + 5)^3(4x - 2)(x - 8)^4$

12. $f(x) = (2 - x)^3(3x + 4)^2(9 + 2x)$

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Find the degree, then determine both the right-end and left-end behaviors for each polynomial.

13. $y = -2(x+4)^2(x-2)$

Deg:

R.E.B.:

L.E.B.:

14. $y = (x+2)(3x-4)(x-5)(x+3)$

Deg:

R.E.B.:

L.E.B.:

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

Deg:

R.E.B.:

L.E.B.:

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

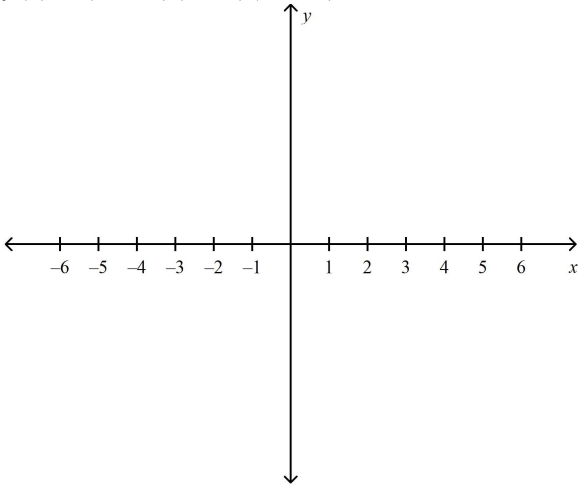
Deg:

R.E.B.:

L.E.B.:

Sketch the polynomial. Pay attention to x-intercepts, y-intercepts, and end behaviors.

17. $f(x) = (3x-6)(4-x)(2x+5)$



18. $f(x) = (2x-3)(1-x)(5-x)^2$