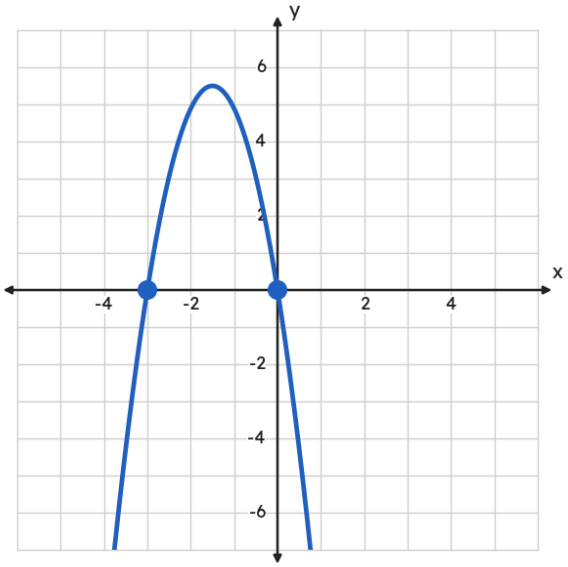
Name: _____ Date: _____

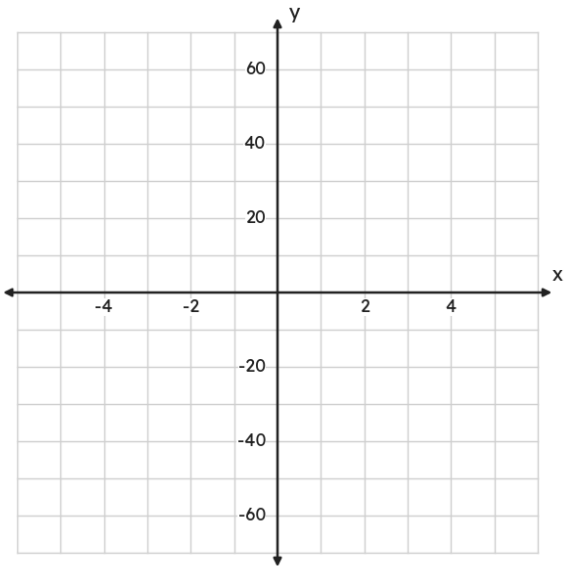
End Behavior Polynomials - Medium

Sketch each polynomial function: plot its zeros, then use the end behavior. For a graph that is drawn, answer the question from the graph.

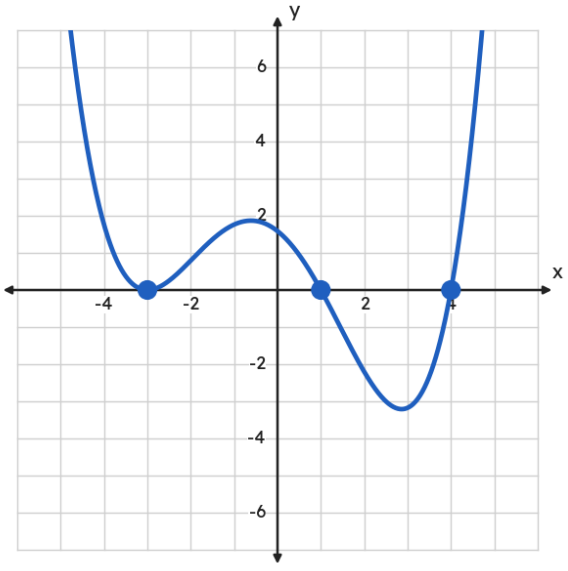
1. Even or odd degree? Positive or negative leading coefficient? Give the end behavior and the real zeros.



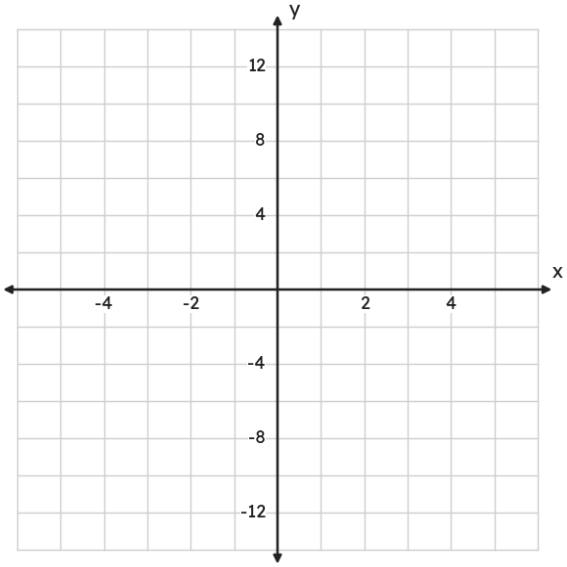
2. Sketch $f(x) = x^2(x + 3)(x - 3)$.



3. Even or odd degree? Positive or negative leading coefficient? Give the end behavior and the real zeros.



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

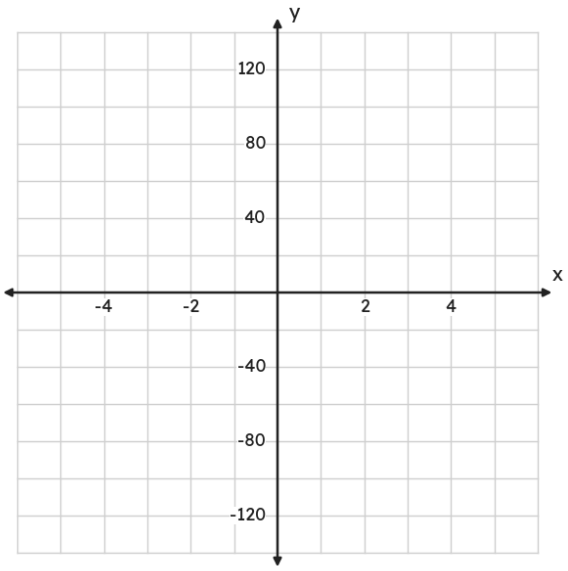


Name: _____ Date: _____

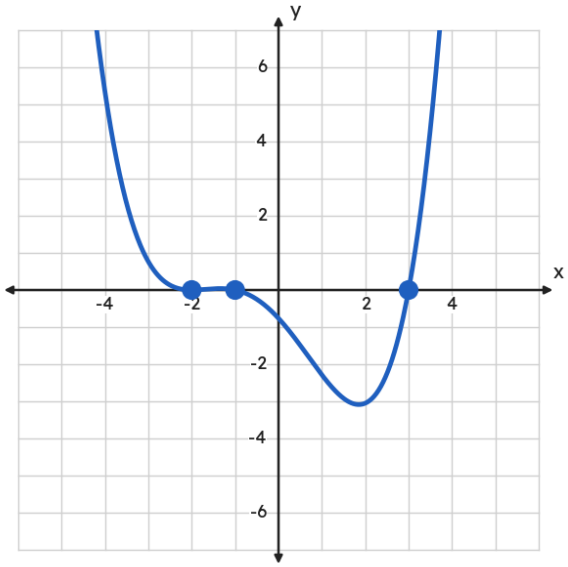
End Behavior Polynomials - Medium

Sketch each polynomial function: plot its zeros, then use the end behavior. For a graph that is drawn, answer the question from the graph.

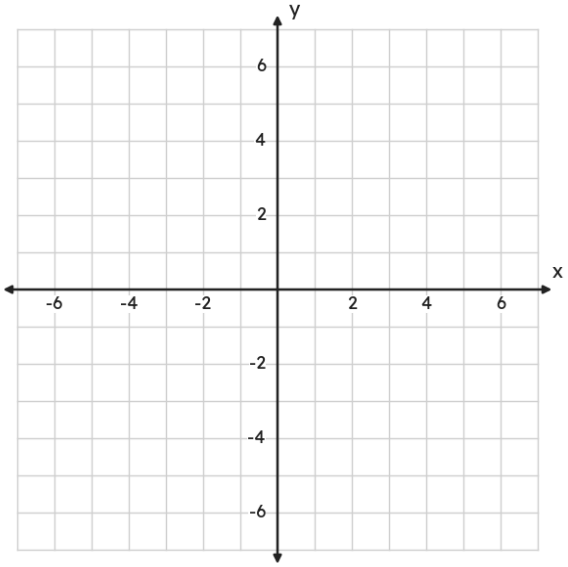
5. Sketch $f(x) = -2(x + 4)(x + 3)(x - 4)$.



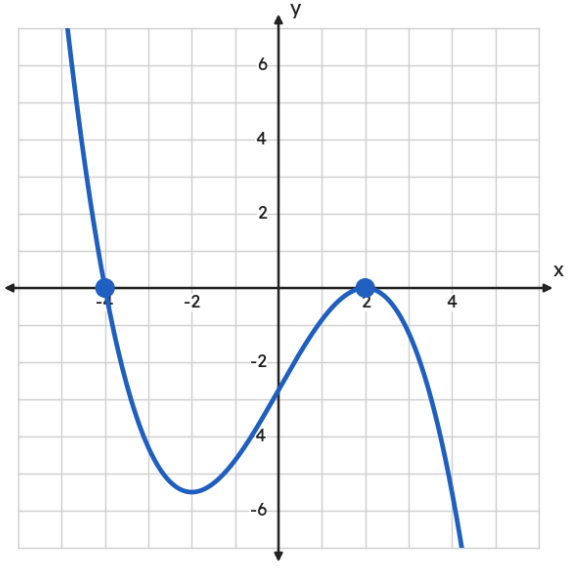
6. Even or odd degree? Positive or negative leading coefficient? Give the end behavior and the real zeros.



7. Graph $f(x) = (x + 1)^3 + 4$.

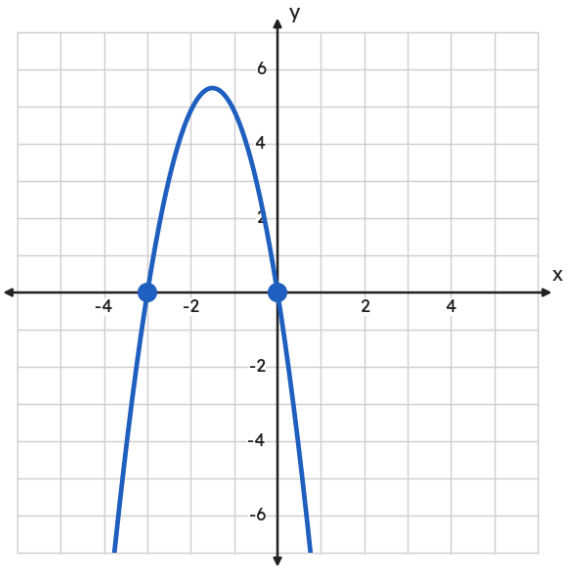


8. Even or odd degree? Positive or negative leading coefficient? Give the end behavior and the real zeros.



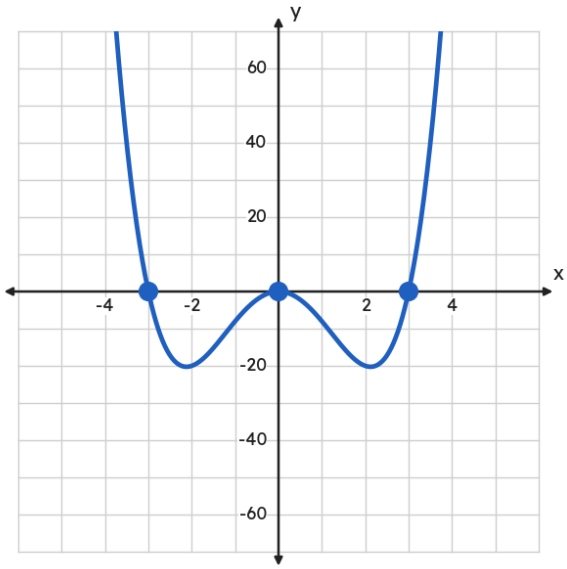
End Behavior Polynomials - Medium - Answer Key

1. Even or odd degree? Positive or negative leading coefficient? Give the end behavior and the real zeros.



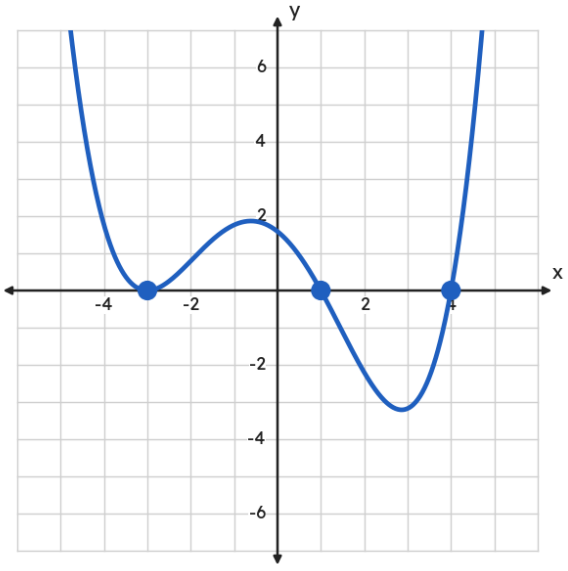
even degree, negative; falls to the left, falls to the right; zeros -3, 0

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



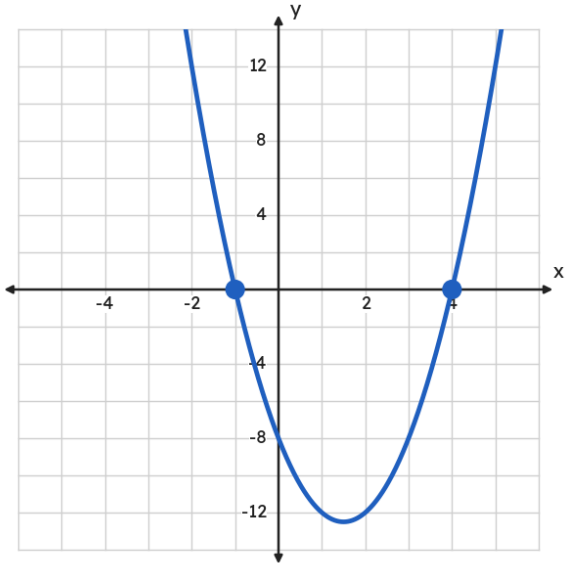
zeros -3, 0, 3 (touches at 0); rises to the left, rises to the right; y-intercept (0, 0)

3. Even or odd degree? Positive or negative leading coefficient? Give the end behavior and the real zeros.



even degree, positive; rises to the left, rises to the right; zeros -3, 1, 4

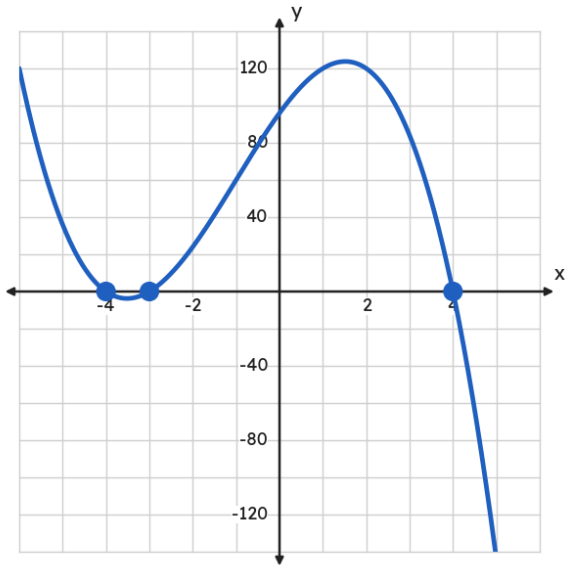
4. Sketch $f(x) = 2(x + 1)(x - 4)$.



zeros -1, 4; rises to the left, rises to the right; y-intercept (0, -8)

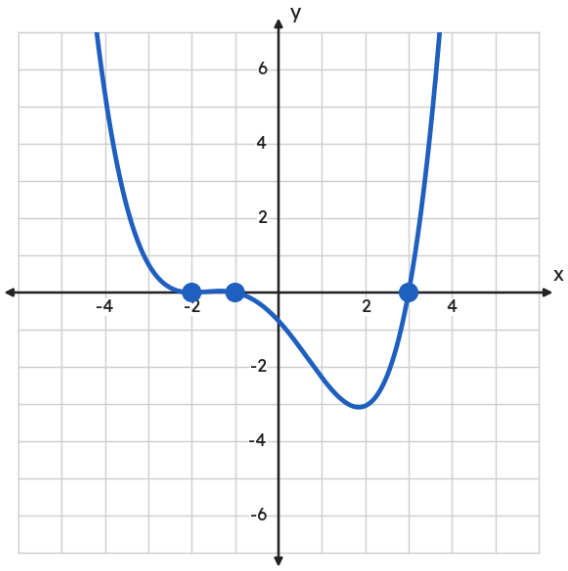
End Behavior Polynomials - Medium - Answer Key

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



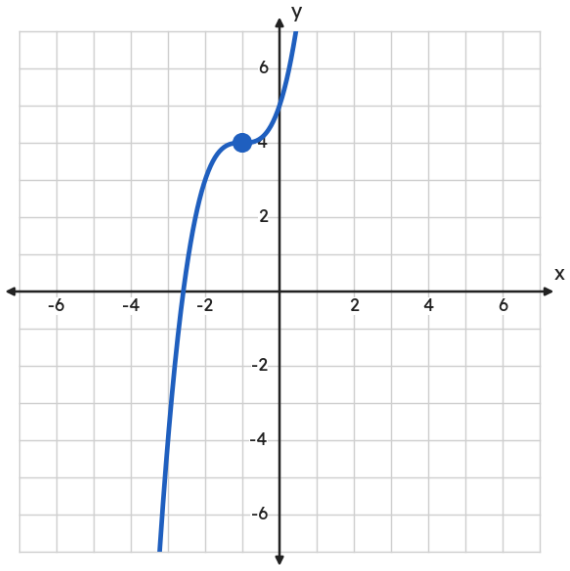
zeros -4, -3, 4; rises to the left, falls to the right; y-intercept (0, 96)

6. Even or odd degree? Positive or negative leading coefficient? Give the end behavior and the real zeros.



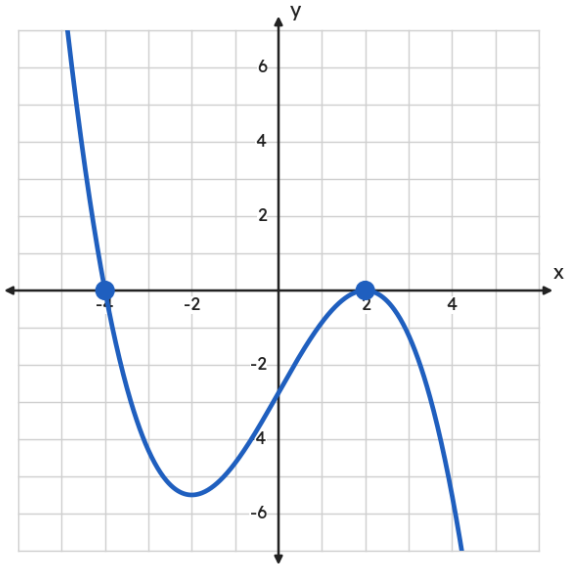
even degree, positive; rises to the left, rises to the right; zeros -2, -1, 3

7. Graph f(x) = $(x + 1)^3 + 4$.



center (-1, 4); left 1, up 4

8. Even or odd degree? Positive or negative leading coefficient? Give the end behavior and the real zeros.



odd degree, negative; rises to the left, falls to the right; zeros -4, 2