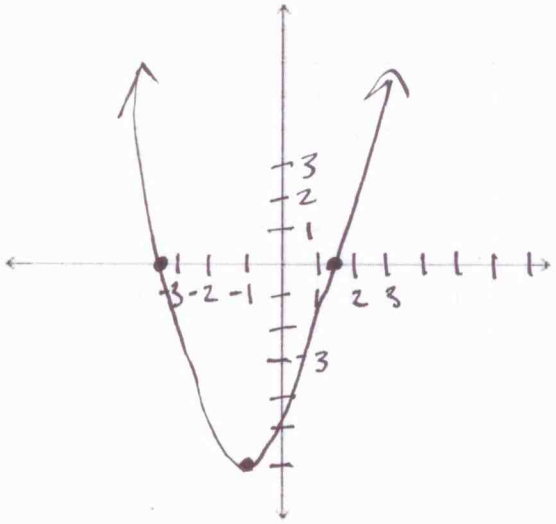
Student Sample

Polynomial Functions

Sketch a graph, state the function's degree, and give the number of turns in each graph.

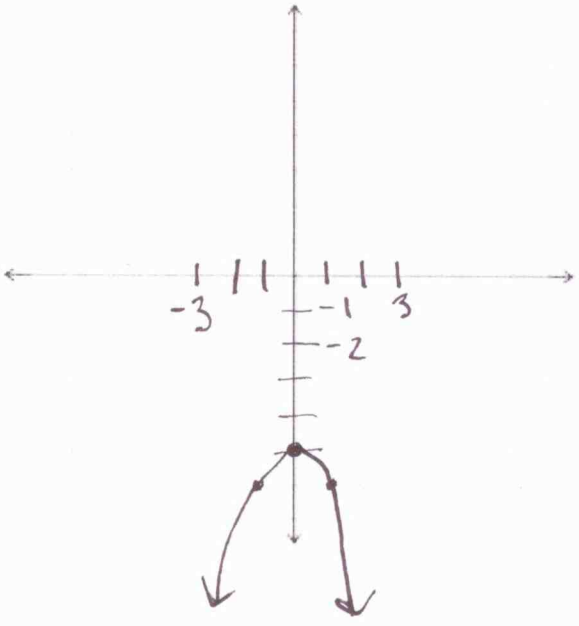
a) $x^2 + 2x - 5$

degree: 2
number of turns: 1



b) $-x^2 - 5$

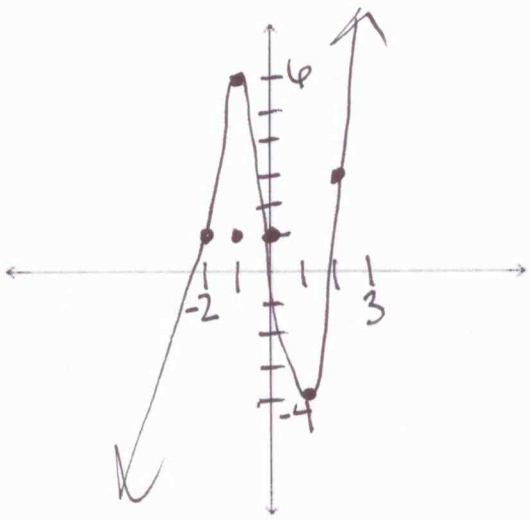
degree: 2
number of turns: 1



c) $2x^3 - 7x + 1$

degree: 3

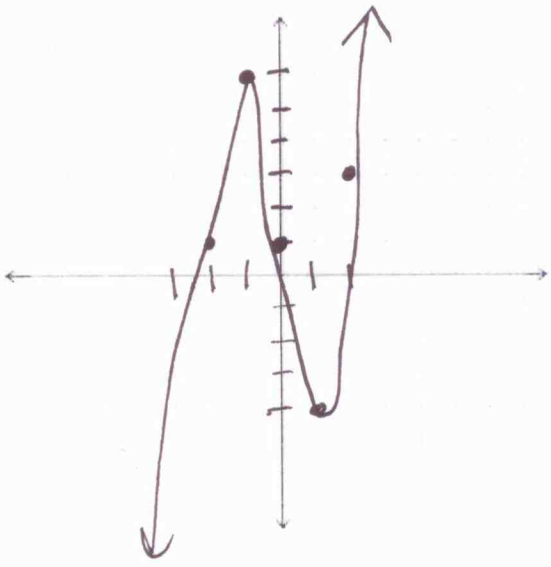
number of turns: 2



d) $-x^3 + 5x + 2$

degree: 3

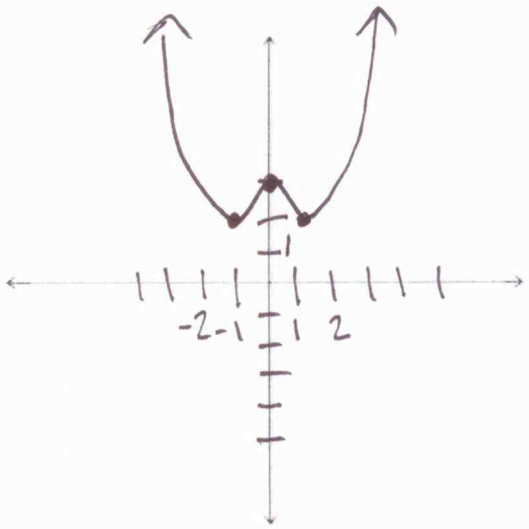
number of turns: 2



e) $x^4 - 2x^2 + 3$

degree: 4

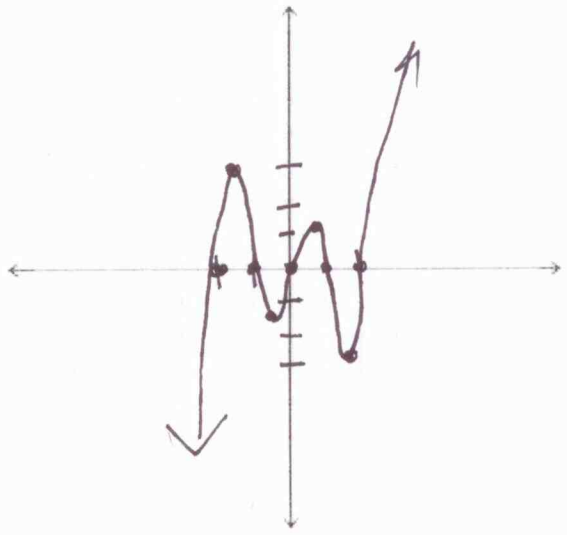
number of turns: 3



f) $x^5 - 5x^3 + 4x$

degree: 5

number of turns: 4



Summary Questions

1. What is the relationship between the degree and the number of turns?

The number of turns is one less than the degree.

2. What is similar about the even degree functions? (a, b, e)

There ending behavior always goes in the same direction

3. What is similar about the odd degree functions? (c, d, f)

There ending behavior always goes in the opposite direction

4. What is the relationship between the number of zeros and the degree?

The degree is the same number of zeros.