

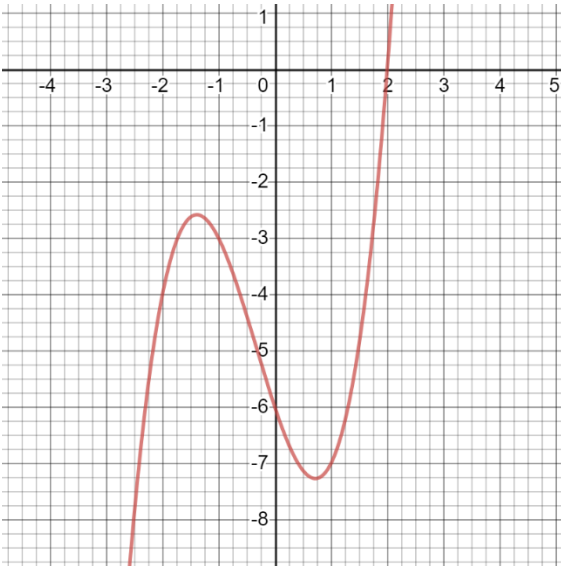
Finding Real and Complex Zeros from a Graph and Multiplicity

Vocabulary

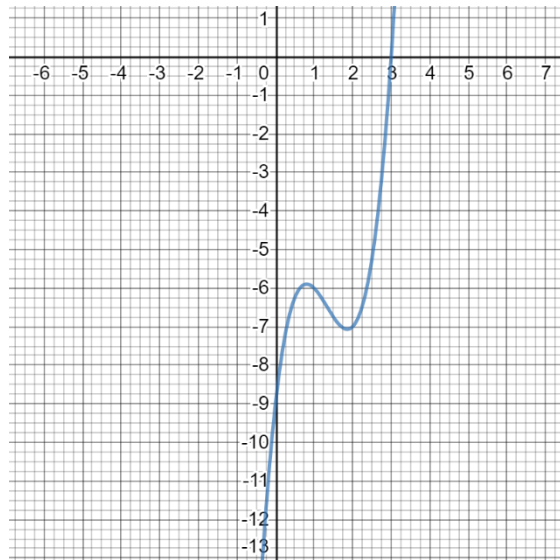
Multiplicity of Zeros	
Even Multiplicity	
Odd Multiplicity	

Finding Real and Complex Zeros from a Graph

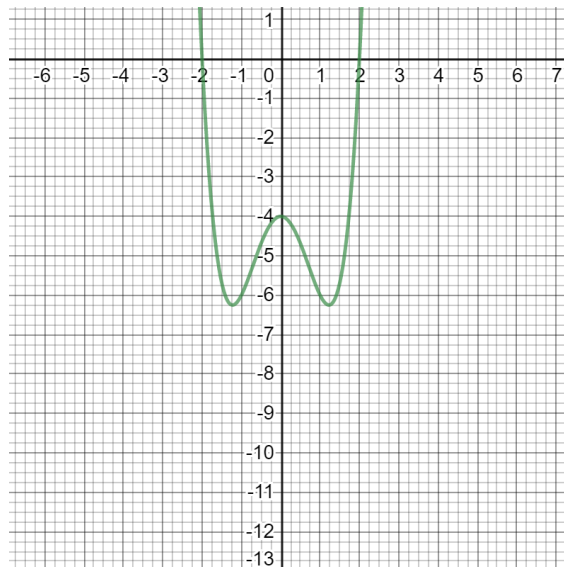
1. $f(x) = x^3 + x^2 - 3x - 6$

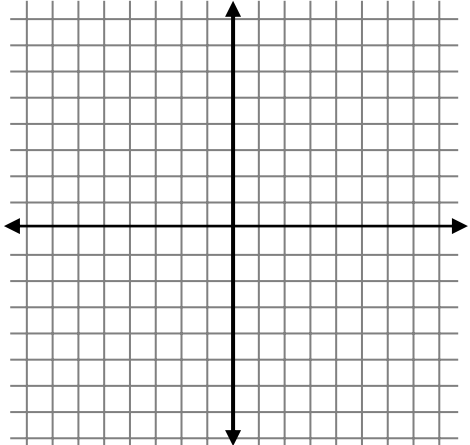
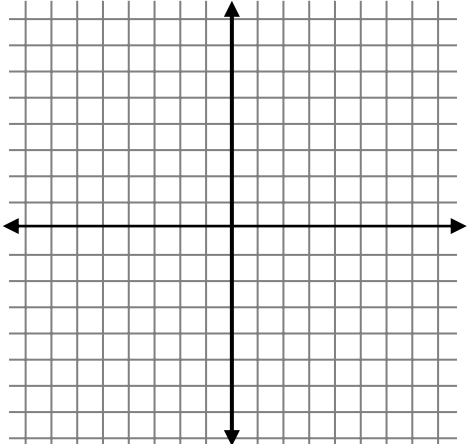
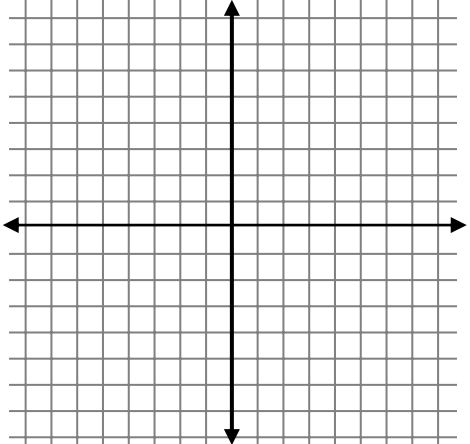


2. $f(x) = 2x^3 - 8x^2 + 9x - 9$



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



Function	Zeros	y-intercept	End Behavior	Graph
1. $f(x) = 4x^3 + 4x^2 - 24x$			$As x \rightarrow \infty, y \rightarrow \underline{\hspace{1cm}}$ $As x \rightarrow -\infty, y \rightarrow \underline{\hspace{1cm}}$	
2. $f(x) = x^4 - 81$			$As x \rightarrow \infty, y \rightarrow \underline{\hspace{1cm}}$ $As x \rightarrow -\infty, y \rightarrow \underline{\hspace{1cm}}$	
3. $f(x) = x(x + 4)(x - 1)^4$	Zeros:		$As x \rightarrow \infty, y \rightarrow \underline{\hspace{1cm}}$ $As x \rightarrow -\infty, y \rightarrow \underline{\hspace{1cm}}$	

4. $f(x) = (x^2 + 9)(x - 1)^5(x + 2)^2$

Zeros:

As $x \rightarrow \infty, y \rightarrow$ ____
As $x \rightarrow -\infty, y \rightarrow$ ____

