

The behavior of the graph of $f(x)$ as x approaches **positive infinity** or **negative infinity**

$$x \rightarrow -\infty$$

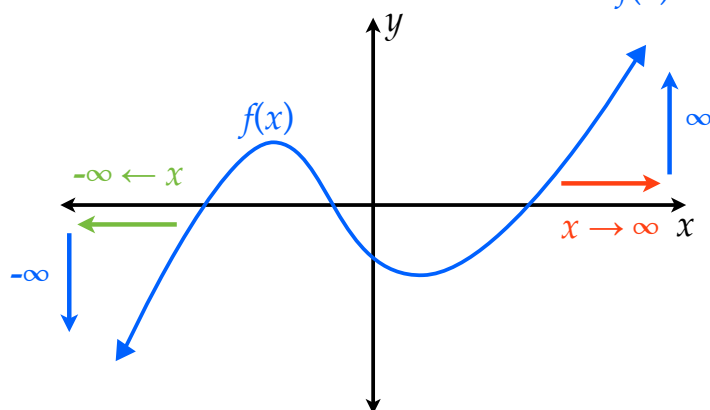
$$x \rightarrow \infty$$

“as x approaches **negative infinity**”

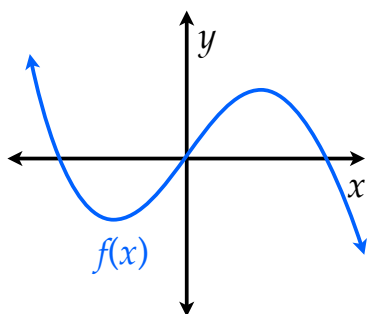
“as x approaches **positive infinity**”

$$f(x) \rightarrow -\infty \text{ as } x \rightarrow -\infty$$

$$f(x) \rightarrow \infty \text{ as } x \rightarrow \infty$$

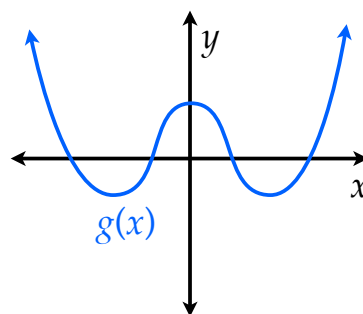


Determine the end behavior of the following functions



$$f(x) \rightarrow \underline{\hspace{2cm}} \text{ as } x \rightarrow \infty$$

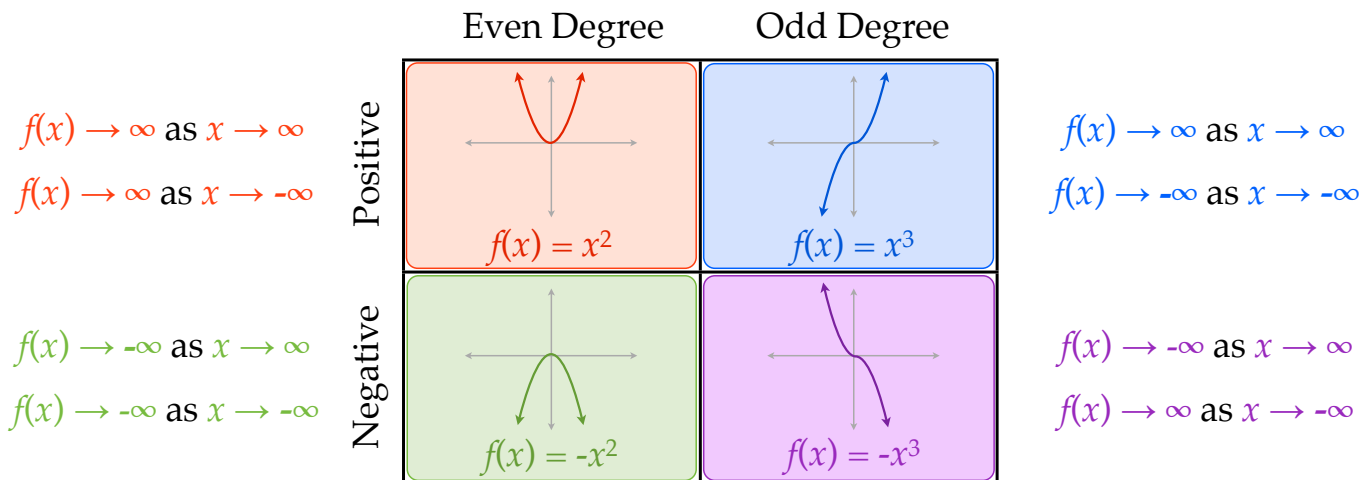
$$f(x) \rightarrow \underline{\hspace{2cm}} \text{ as } x \rightarrow -\infty$$



$$g(x) \rightarrow \underline{\hspace{2cm}} \text{ as } x \rightarrow \infty$$

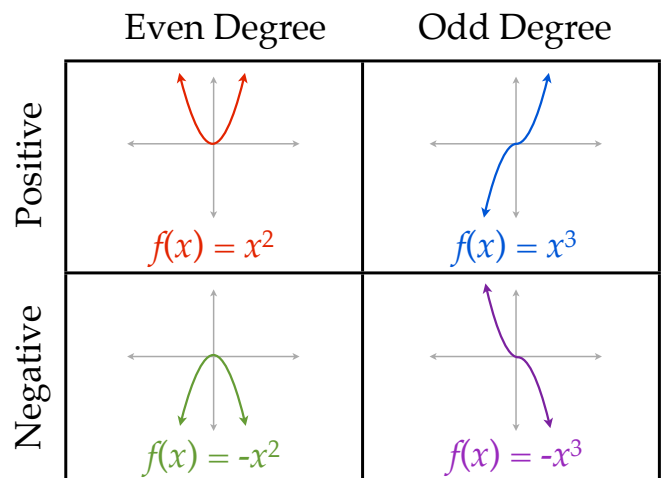
$$g(x) \rightarrow \underline{\hspace{2cm}} \text{ as } x \rightarrow -\infty$$

Given the equation of a polynomial function,
we can analyze the degree and leading coefficient of the polynomial.



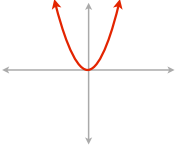
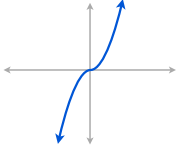
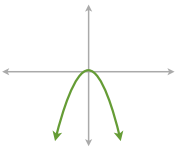
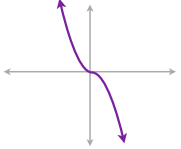
Determine the end behavior of the following functions

$$f(x) = 2x^5 + 8x^2 + 7x$$



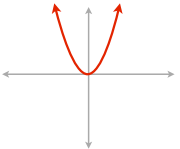
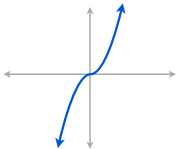
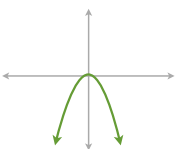

Determine the end behavior of the following functions

$$f(x) = -4x^6 - 5x^3 + 10$$

	Even Degree	Odd Degree
Positive	 $f(x) = x^2$	 $f(x) = x^3$
Negative	 $f(x) = -x^2$	 $f(x) = -x^3$

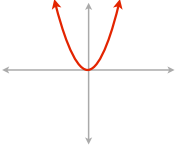
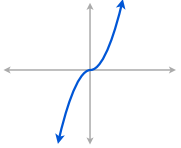
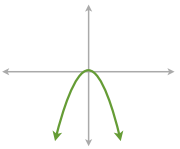
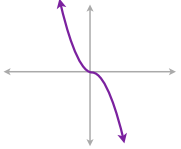
Determine the end behavior of the following functions

$$f(x) = 5x^4 - x^3 + 5x^2 - 2x + 12$$

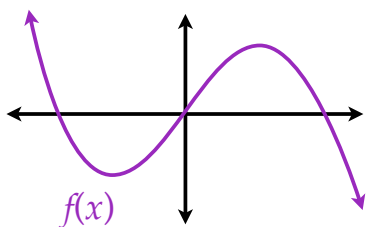
	Even Degree	Odd Degree
Positive	 $f(x) = x^2$	 $f(x) = x^3$
Negative	 $f(x) = -x^2$	 $f(x) = -x^3$

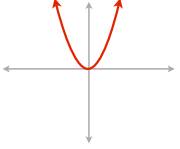
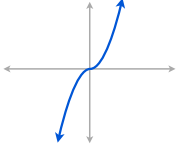
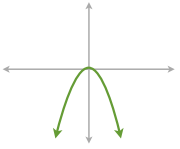
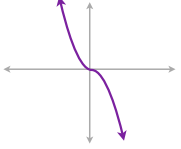
Determine the end behavior of the following functions

$$f(x) = -2x^7 - 4x^5 + x^3 + 10x + 9$$

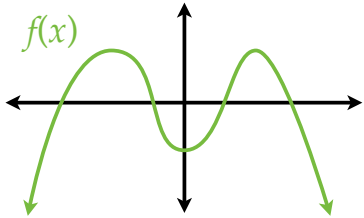
	Even Degree	Odd Degree
Positive	 <p>$f(x) = x^2$</p>	 <p>$f(x) = x^3$</p>
Negative	 <p>$f(x) = -x^2$</p>	 <p>$f(x) = -x^3$</p>

Determine if the degree of the following function is even or odd and if the leading coefficient is positive or negative.



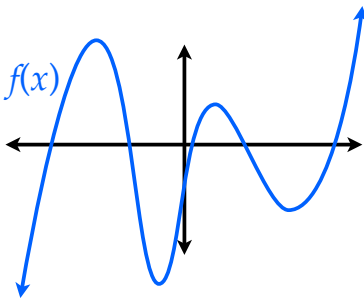
	Even Degree	Odd Degree
Positive	 <p>$f(x) = x^2$</p>	 <p>$f(x) = x^3$</p>
Negative	 <p>$f(x) = -x^2$</p>	 <p>$f(x) = -x^3$</p>

Determine if the degree of the following function is even or odd and if the leading coefficient is positive or negative.



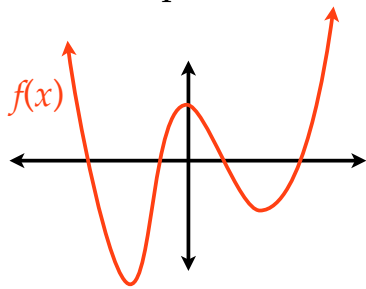
	Even Degree	Odd Degree
Positive	$f(x) = x^2$	$f(x) = x^3$
Negative	$f(x) = -x^2$	$f(x) = -x^3$

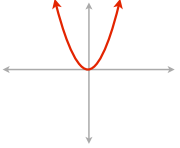
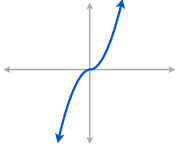
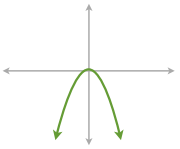
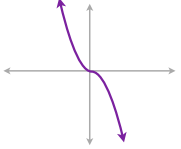
Determine if the degree of the following function is even or odd and if the leading coefficient is positive or negative.



	Even Degree	Odd Degree
Positive	$f(x) = x^2$	$f(x) = x^3$
Negative	$f(x) = -x^2$	$f(x) = -x^3$

Determine if the degree of the following function is even or odd and if the leading coefficient is positive or negative.



	Even Degree	Odd Degree
Positive	 $f(x) = x^2$	 $f(x) = x^3$
Negative	 $f(x) = -x^2$	 $f(x) = -x^3$