

Name : _____

Investigating Graphs of Polynomial Functions

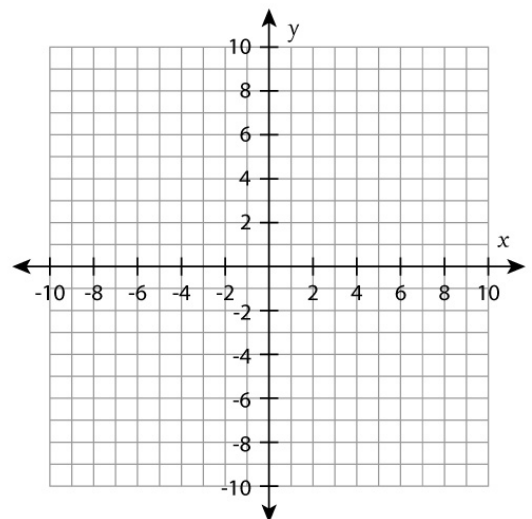
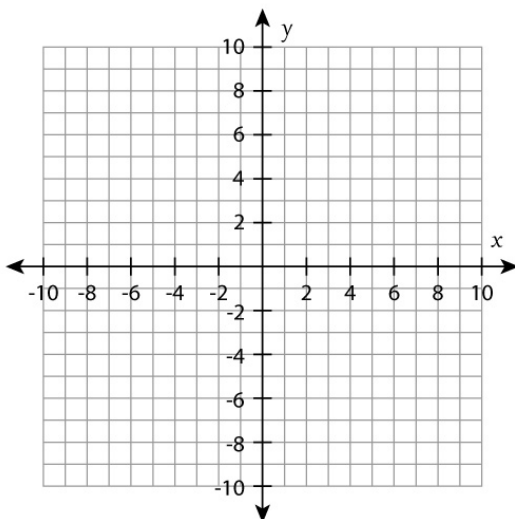
Complete the table to identify the leading coefficient, sign & degree and end behavior of each polynomial function.

Polynomial Function	Leading Coefficient	Sign & Degree	End Behavior
① $f(x) = 4x^3 + 8x^2 - 5$			
② $f(x) = -2x^5 - 6x^2 + x$			
③ $f(x) = -x^4 + 6x^3 - x + 9$			
④ $f(x) = x^3 + 4x^2 + x - 6$			

⑤ Graph the given Polynomials.

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

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



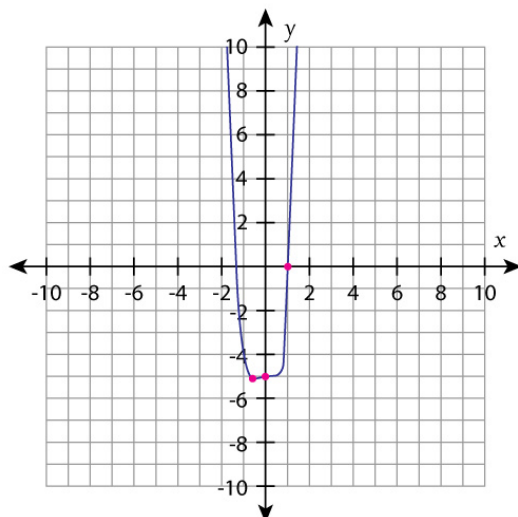
Investigating Graphs of Polynomial Functions

Answers

Polynomial Function	Leading Coefficient	Sign & Degree	End Behavior
① $f(x) = 4x^3 + 8x^2 - 5$	4	+, 3	$f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$, $f(x) \rightarrow \infty$ as $x \rightarrow \infty$
② $f(x) = -2x^5 - 6x^2 + x$	-2	-, 5	$f(x) \rightarrow \infty$ as $x \rightarrow -\infty$, $f(x) \rightarrow -\infty$ as $x \rightarrow \infty$
③ $f(x) = -x^4 + 6x^3 - x + 9$	-1	-, 4	$f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$, $f(x) \rightarrow -\infty$ as $x \rightarrow \infty$
④ $f(x) = x^3 + 4x^2 + x - 6$	1	1, 3	$f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$, $f(x) \rightarrow \infty$ as $x \rightarrow \infty$

⑤ Graph the given Polynomials.

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



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

