





Polynomials End Behavior Name _____

Determine whether the leading coefficient, a_n , is positive or negative and whether the degree of the polynomial is odd or even. Sketch the snowman's arms to represent the end behavior of each polynomial. Distinguish the end behavior: $f(x) \rightarrow \underline{\hspace{1cm}}$ as $x \rightarrow \pm\infty$.

<p><i>Example:</i></p>		



Polynomials End Behavior

Answer Key

Determine whether the leading coefficient, a_n , is positive or negative and whether the degree of the polynomial is odd or even. Sketch the snowman's arms to represent the end behavior of each polynomial. Distinguish the end behavior: $f(x) \rightarrow \underline{\hspace{1cm}}$ as $x \rightarrow \pm\infty$.

<p><i>Example:</i></p> <p>a_n + or -</p> <p>degree odd or even</p> <p>$f(x) = x^2$ $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$ $f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$</p>	<p>a_n + or -</p> <p>degree odd or even</p> <p>$f(x) = -x^3$ $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$ $f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$</p>	<p>a_n + or -</p> <p>degree odd or even</p> <p>$f(x) = -3x^2$ $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$ $f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$</p>
<p>a_n + or -</p> <p>degree odd or even</p> <p>$f(x) = \frac{1}{4}x^3$ $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$ $f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$</p>	<p>a_n + or -</p> <p>degree odd or even</p> <p>$f(x) = -x^7 + x$ $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$ $f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$</p>	<p>a_n + or -</p> <p>degree odd or even</p> <p>$f(x) = -x^2 + \frac{1}{2}x^5$ $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$ $f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$</p>
<p>a_n + or -</p> <p>degree odd or even</p> <p>$f(x) = 4 - x$ $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$ $f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$</p>	<p>a_n + or -</p> <p>degree odd or even</p> <p>$f(x) = \frac{2}{3}x^3 + x^6$ $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$ $f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$</p>	<p>a_n + or -</p> <p>degree odd or even</p> <p>$f(x) = 1 + x^2 - x^4$ $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$ $f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$</p>

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