

HOMework: END BEHAVIOR



DAY 5

NAME: _____

Find the degree, leading coefficient, and end behavior. Then draw a rough sketch.

1. $f(x) = 3x^5 + x^3 + 10x^2 + 4x + 1$

Degree: _____ LC: _____

As $x \rightarrow +\infty$ then $f(x) \rightarrow$ _____

As $x \rightarrow -\infty$ then $f(x) \rightarrow$ _____

Sketch

2. $f(x) = -(x + 1)^3 (x - 5)^2$

Degree: _____ LC: _____

As $x \rightarrow +\infty$ then $f(x) \rightarrow$ _____

As $x \rightarrow -\infty$ then $f(x) \rightarrow$ _____

Sketch

Find the degree of each function and end behavior.

3. $f(x) = -3x^4 + 10x^3 + 4x^2 + 1$

Degree: _____ LC: _____

As $x \rightarrow +\infty$ then $f(x) \rightarrow$ _____

As $x \rightarrow -\infty$ then $f(x) \rightarrow$ _____

Sketch

4. $f(x) = 2(x + 1)^3 (x - 5)$

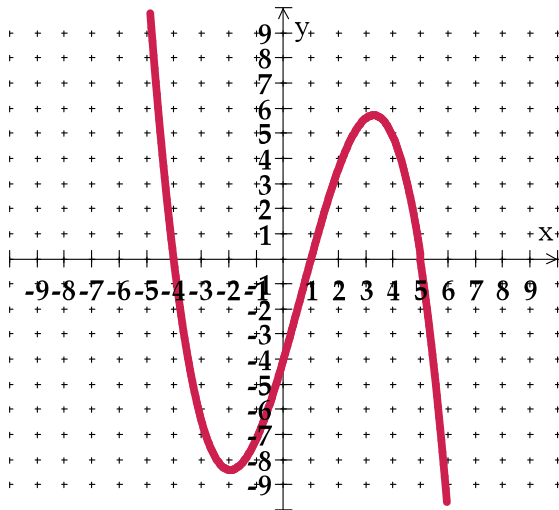
Degree: _____ LC: _____

As $x \rightarrow +\infty$ then $f(x) \rightarrow$ _____

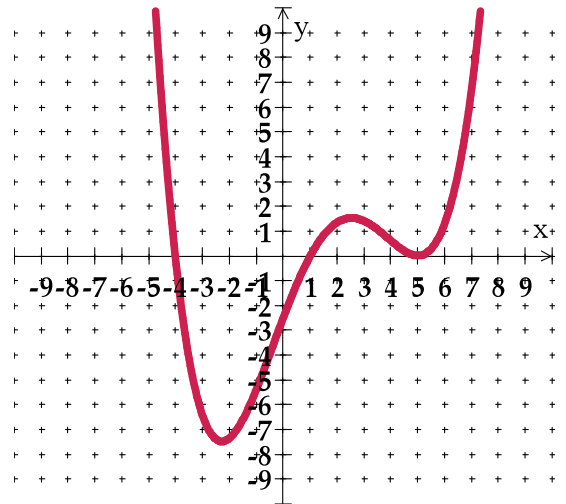
As $x \rightarrow -\infty$ then $f(x) \rightarrow$ _____

Sketch

5. Use the graph to answer the questions.



6. Use the graph to answer the questions.



A. End Behavior: As $x \rightarrow +\infty, f(x) \rightarrow$ _____
As $x \rightarrow -\infty, f(x) \rightarrow$ _____

B. Identify the real zeros of the graph:

C. Circle the turning points on the graph. Determine if they are relative maximums or minimums, absolute maximums or minimums.

D. Determine the intervals where the polynomials are
Increasing: _____
Decreasing: _____

E. Determine the domain and range.
Domain: _____
Range: _____

A. End Behavior: As $x \rightarrow +\infty, f(x) \rightarrow$ _____
As $x \rightarrow -\infty, f(x) \rightarrow$ _____

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