

Name _____

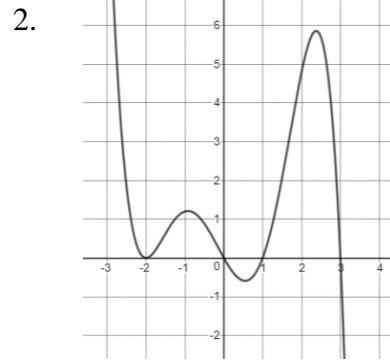
Algebra 2 & Trig

Unit 3 Target 3 Remediation

1. What is the maximum number of turns for a function of the form:

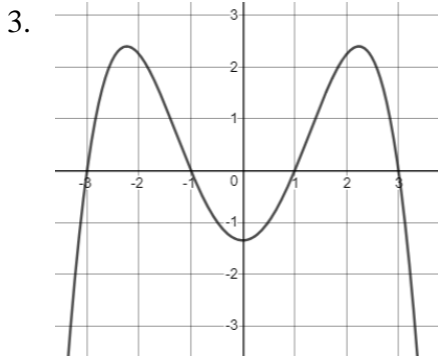
$$f(x) = ax^4 + bx^3 + cx^2 + dx + e$$

- a. 6
- b. 5
- c. 4
- d. 3

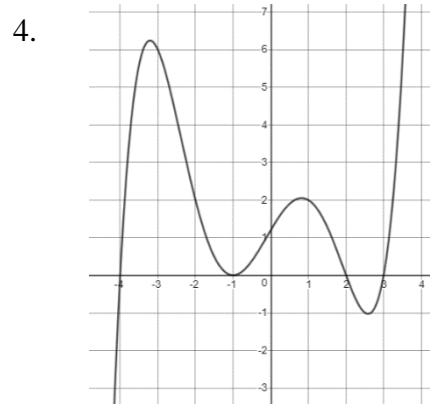


The function has a minimum degree of _____

The leading coefficient is: positive or negative (circle)



Circle all the intervals that are decreasing:
(0, 2.2) (2.2, ∞) (-∞, -2.2) (-2.2, 0)



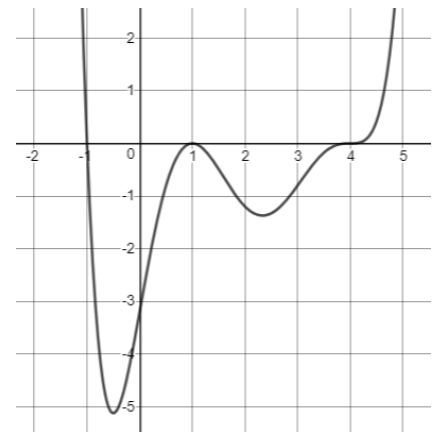
Describe the end behavior of the function:

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

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

5. Use the graph on the right to answer each question.

- a. Is the function of even or odd degree? How do you know?
- b. Is the leading coefficient positive or negative? How do you know?
- c. Estimate the value of each of the real zeros of the function.
- d. Does there appear to be any zeros of even multiplicity? How do you know?
- e. Does there appear to be any zeros of odd multiplicity? How do you know?
- f. What is the **minimum** degree of the function? How do you know?
- g. Describe the behavior of the function on the interval (1, 2.3).
- h. State the domain and range of the function using interval notation (estimate).



6. Use the equation to answer each question.

$$f(x) = -x^2(x - 2)^3(x^2 - 25)$$

- a. What is the degree of this function?
- b. What is the **maximum** number of turns in this function?
- c. How many roots does this function have?
- d. What are the zeros of this function?
- e. Are there any points of tangency to the x-axis? If so, where?
- f. Are there any terrace points at the x-axis? If so, where?
- g. As $x \rightarrow -\infty$, $f(x) \rightarrow$ _____ and as $x \rightarrow \infty$, $f(x) \rightarrow$ _____
- h. Complete the sign change chart for the function.

- i. **Sketch** the graph of this function without using a calculator. **Be sure to label the units on the x-axis.**