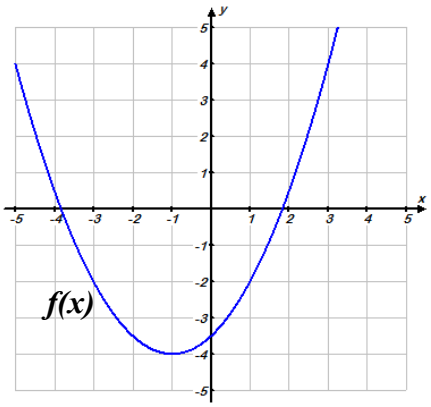
(Section 5-7) Extras

Name:

Average rate of change

1. What is the average rate of change in the function $f(x) = .2x^2 - 1$ from x = 1 to x = 6?

2. Given the following graph of the function *f(x)* determine the average change in the function from x = -3 to x = 1?



3. A person was driving to the beach in Florida from Atlanta. The trip took roughly 5.3 hours and they traveled a total distance of 370 miles. They mainly drove on an interstate that had a speed limit of 70 mph.
   a. What was their average rate of speed?

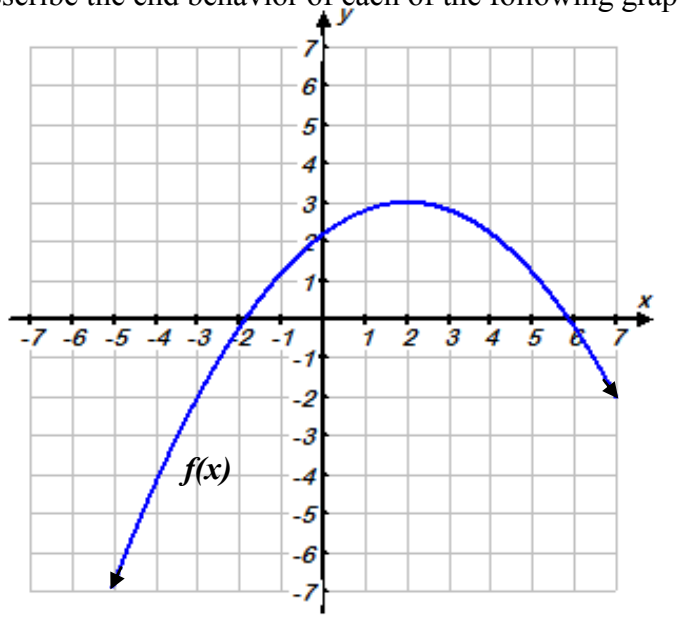
   b. Do you think they ever traveled over the speed limit? Explain your reasoning.

4. The function $s(t) = \dfrac{25t\sqrt{0.04t^2 + 1}}{.02t^3 + 0.5}$ represents the speed of a train t – hours after it left the station at 12:00 pm.
   a. What is the average acceleration of the train over the first 2 hours of its trip?

   b. What is the average acceleration of the train from 3 pm to 6 pm?

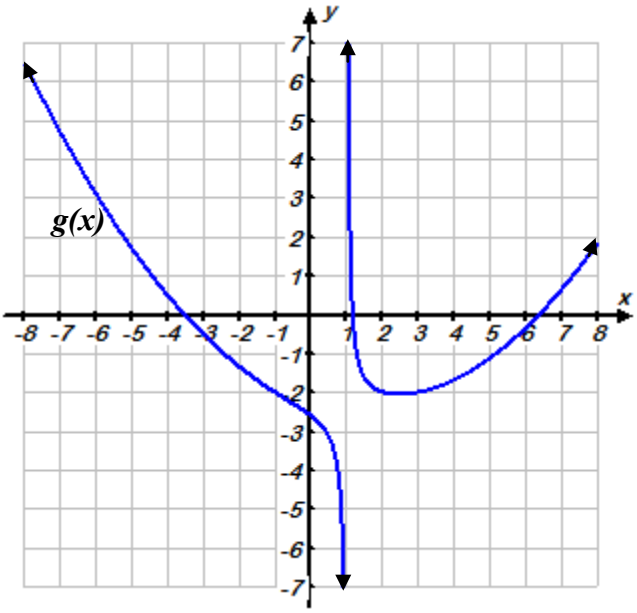
End Behavior

Describe the end behavior of each of the following graphs.



As $x \to \infty$, $f(x) \to$ _____

As $x \to -\infty$, $f(x) \to$ _____

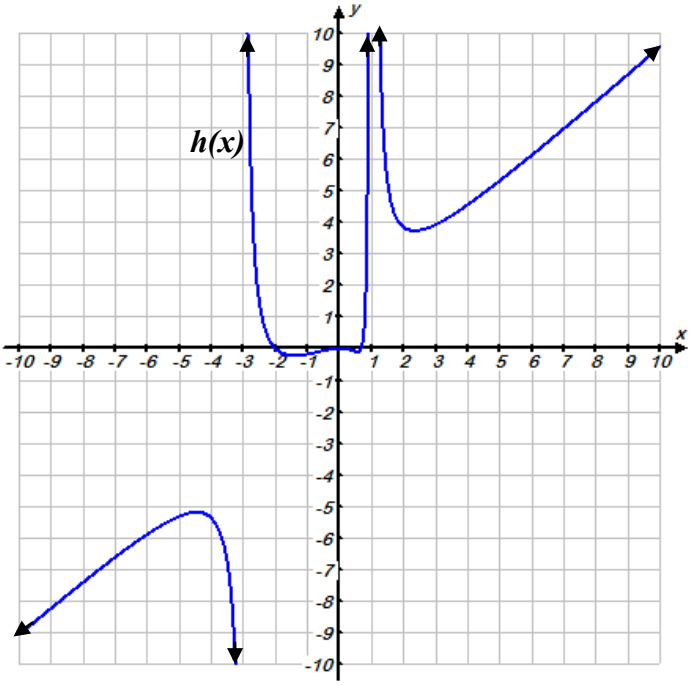


As $x \to \infty$, $g(x) \to$ _____

As $x \to -\infty$, $g(x) \to$ _____

As $x \to 1^-$, $g(x) \to$ _____

As $x \to 1^+$, $g(x) \to$ _____



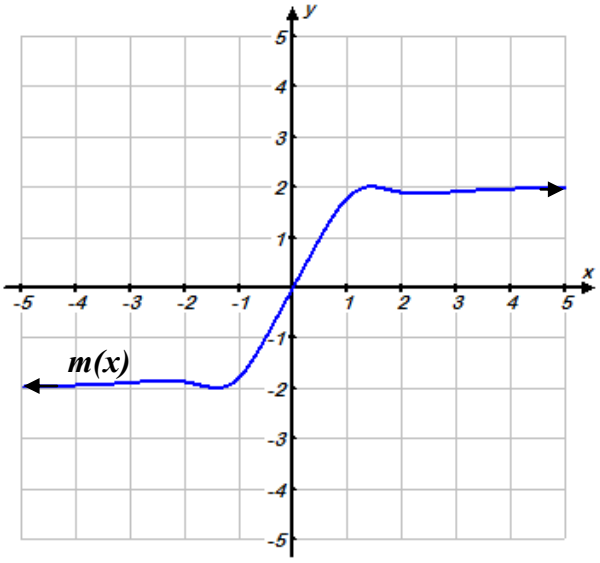
As $x \to -\infty$, $h(x) \to$ _____

As $x \to \infty$, $h(x) \to$ _____

As $x \to -3^-$, $f(x) \to$ _____

As $x \to 1^+$, $f(x) \to$ _____

As $x \to 1^-$, $f(x) \to$ _____



As $x \to -\infty$, $g(x) \to$ _____

As $x \to \infty$, $g(x) \to$ _____

More Applications of Quadratics

1. The expression $-x^2+70x-600$ represents a company's profit for selling x items. For which number(s) of items sold is the company's profit equal to \$0?

2. Given the expression s^2 is used to calculate the area of a square, where s is the side length of the square. What does the expression $(8x)^2$?

Literal equations

1. Solve the equation $SA=4\pi r^2$ for r.

2. Solve the equation $SA=2\pi r^2+2\pi rh$ for h.

3. Solve the equation $SA=2lw+2lh+2hw$ for w.

4. Solve the equation $h=-16t^2+48$ for t.