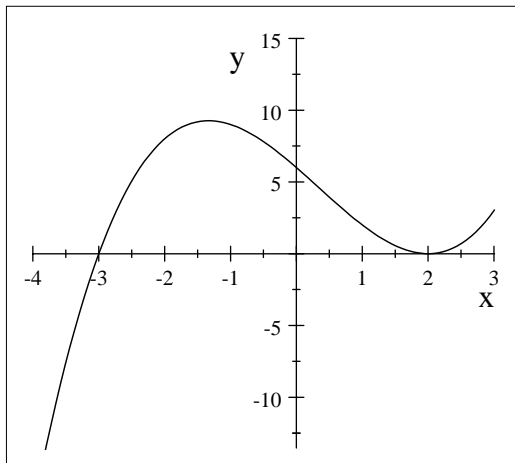


1. (3pts) Give the domain of $g(x) = 2\sqrt{1 + 3x}$. Specify the domain in **an interval notation**.

2. (3pts) The graph of $f(x)$ is given below. Find the following.



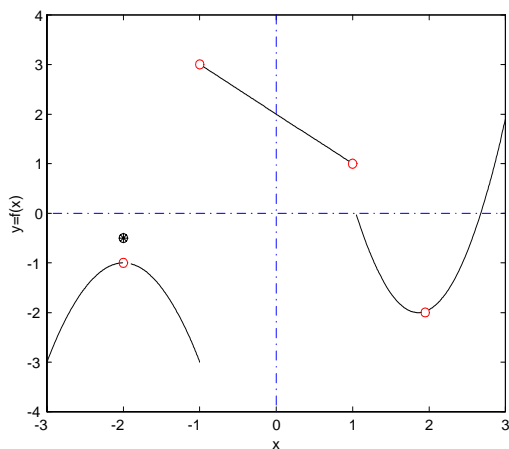
1. State the interval(s) on which $f(x) < 0$.

2. Give the domain (interval notation) of $g(x) = \frac{1}{f(x)}$.

3. Extra 2 points:

Give the domain (in interval notation) of $h(x) = \sqrt{f(x)}$.

3. (3pts) Based on the graph of $f(x)$ given below find the limits.



a. $\lim_{x \rightarrow 1^-} f(x) =$
b. $\lim_{x \rightarrow 1^+} f(x) =$
c. $\lim_{x \rightarrow 1} f(x) =$
d. $\lim_{x \rightarrow -2} f(x) =$
e. $\lim_{x \rightarrow 2} f(x) =$

4. (3pts) (i) Complete the following table by a calculator with at least 8 decimal digits:

x	$\frac{x^2 - 4}{x - 1}$	$\frac{x^2 - 4}{x - 2}$
1.9999		
1.99999		
1.999999		

(ii) Based on the results obtained in the table, find numerically the limits

$$\lim_{x \rightarrow 2^-} \frac{x^2 - 4}{x - 1} =$$

$$\lim_{x \rightarrow 2^-} \frac{x^2 - 4}{x - 2} =$$