

Name \_\_\_\_\_

1. (2 points) Evaluate the following limits.

(a)  $\lim_{x \rightarrow 3} \frac{x - 3}{2x}$

(b)  $\lim_{x \rightarrow 2^+} \frac{1}{2 - x}$

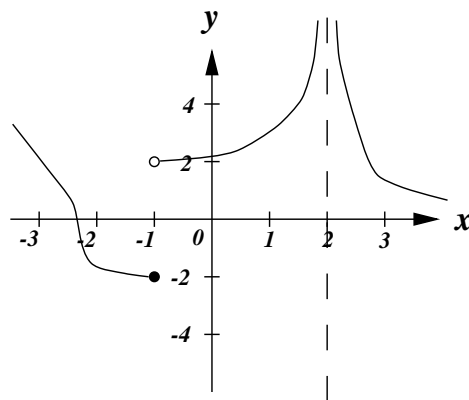
2. (2 points) Approximate the following limit. Your answer must be within 0.1 of the correct limit. This degree of accuracy should be easy to obtain if you use your calculator to make an appropriate table of values.

$$\lim_{t \rightarrow 0} \frac{\sin^2(3t)}{t^2}$$

3. (2 points) Evaluate the following limit analytically (i.e., you will not receive credit for simply approximating the correct answer with a calculator.)

$$\lim_{x \rightarrow 2} \frac{12x - 24}{x^2 - 4}$$

4. (4 points) The graph of  $f(x)$  has a vertical asymptote at  $x = 2$  as shown below. Evaluate the following quantities.



(a)  $\lim_{x \rightarrow -1^+} f(x)$

(b)  $\lim_{x \rightarrow -1^-} f(x)$

(c)  $f(-1)$

(d)  $\lim_{x \rightarrow 2} f(x)$