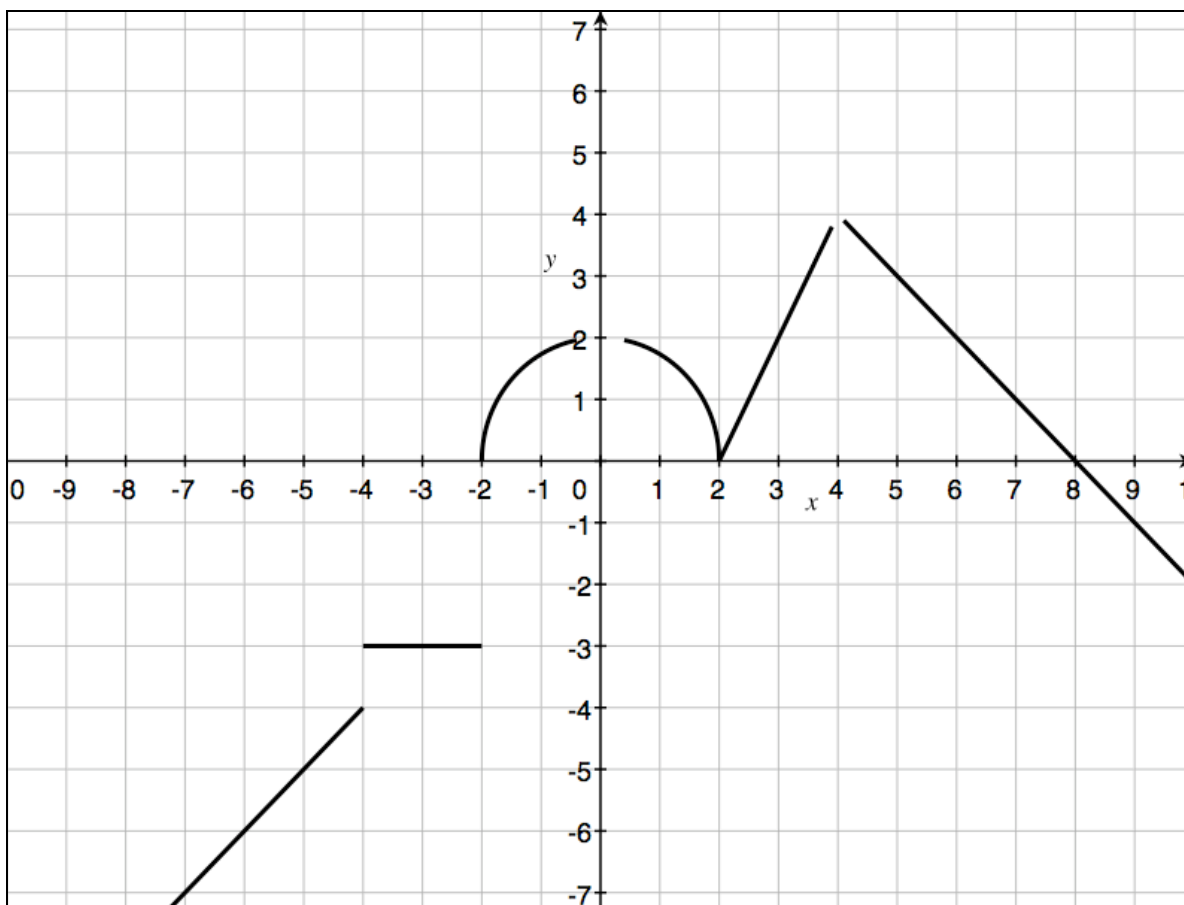


AP Calc Warm Up – 9/15/10

Name: _____

Period: _____

1) Answer the questions using the following graph.



a. $\lim_{x \rightarrow 6} f(x) =$

b. $\lim_{x \rightarrow 0} f(x) =$

c. $\lim_{x \rightarrow -4} f(x) =$

AP Calc

Finding Limits Analytically

Name: _____ Date: _____ Period: _____

Students will be able to find the limit of a function using its graph.

Remind yourself about what a limit means by translating the following notation into something that you understand.

$$\lim_{x \rightarrow 6} f(x) = 2$$

Translation:

There are two ways to write a limit:

To find a limit analytically (by using its equation):

Examples

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

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

$$\lim_{x \rightarrow 3} \frac{2}{x^2 - 2x - 3} =$$

$$\lim_{x \rightarrow 4} \frac{x-4}{x^2 - 2x - 8} =$$

$$\lim_{x \rightarrow 0} \frac{\sin x}{x} =$$

Practice

1) Find the following limits:

a. $\lim_{x \rightarrow -5} 3x + 15 =$

b. $\lim_{x \rightarrow 7} \frac{1}{x - 7} =$

c. $\lim_{x \rightarrow 0} \frac{1}{x} =$

d. $\lim_{x \rightarrow -5} \frac{x^2 + 3x + 7}{x - 5} =$

e. $\lim_{x \rightarrow -2} \frac{x^2 - 5x - 24}{x - 8} =$

AP Problem

1) If $a \neq 0$, then $\lim_{x \rightarrow -a} \frac{x^2 - a^2}{x^4 - a^4}$ is:

a) $\frac{1}{6a^2}$

b) 0

c) $\frac{1}{a^2}$

d) $\frac{1}{2a^2}$

e) Does not exist

AP Calc – Exit Slip – 9/15/10

Name: _____

Period: _____

1) Find the following limits:

a. $\lim_{x \rightarrow 6} 2x + 5 =$

b. $\lim_{x \rightarrow 2} \frac{1}{x} =$

c. $\lim_{x \rightarrow 0} \frac{1}{x} =$

d. $\lim_{x \rightarrow -5} \frac{x^2 + 3x + 2}{x + 5} =$

e. $\lim_{x \rightarrow -2} \frac{x^2 + 3x + 2}{x + 2} =$