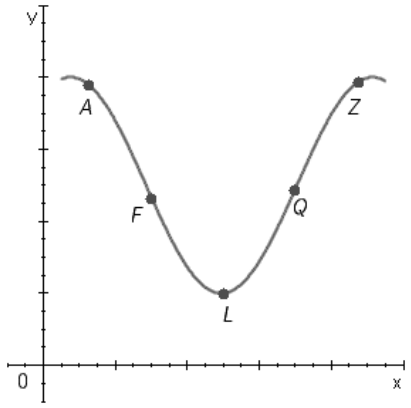
Name: _____ Class:___ Date: _____ (copy A)

1 Consider the slope of the given curve at each of the five points shown below.



List these five slopes in decreasing order. Separate the letters with commas.

_____

2 Locate the discontinuities of the function.

$$y = \frac{1}{1 + \tan x}$$

a. $x = -\frac{\pi}{4} + \pi n$, n an integer

b. $x = \frac{\pi}{4} + \pi n$, n an integer

c. $x = 2\pi n$, n an integer

d. $x = \pi + 2\pi n$, n an integer

3 If f and g are continuous functions with $f(4) = 5$ and $\lim_{x \to 4} [6f(x) - g(x)] = 6$, find $g(4)$.

_____

4 Choose an equation from the following that expresses the fact that a function f is continuous at the number 3:

a. $\lim_{x \to \infty} f(x) = f(3)$

b. $\lim_{x \to 3} f(x) = f(3)$

c. $\lim_{x \to \infty} f(x) = 3$

5 Find a function g that agrees with f for $x \neq 25$ and is continuous on $\mathbb{R}$

$$f(x) = \frac{5 - \sqrt{x}}{25 - x}$$

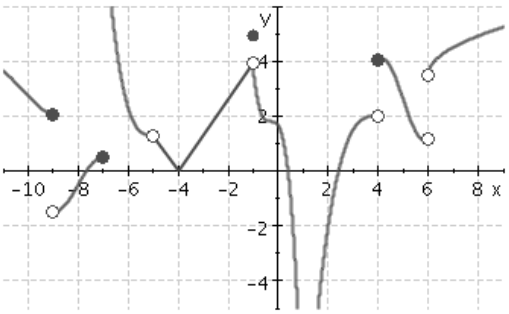
a. $g(x) = \frac{1}{5 - x}$

b. $g(x) = \frac{1}{25 + x}$

c. $g(x) = \frac{1}{5 - \sqrt{x}}$

d. $g(x) = \frac{1}{5 + \sqrt{x}}$

6 For $x = -7$, determine whether f is continuous from the right, or from the left, or either, or neither.



_____

ANSWER KEY

Name: _____ Class:___ Date: _____ (copy A)

1. Q,Z,L,A,F

2. a

3. 24

4. b

5. d

6. left

Name: _____ Class:___ Date: _____ (copy B)

1 Choose an equation from the following that expresses the fact that a function f is continuous at the number 4:

a. $\lim_{x \to 4} f(x) = f(4)$

b. $\lim_{x \to \infty} f(x) = f(4)$

c. $\lim_{x \to \infty} f(x) = 4$

2 If f and g are continuous functions with $f(3) = 4$ and $\lim_{x \to 3} [9f(x) - g(x)] = 5$, find $g(3)$.

_____

3 Locate the discontinuities of the function.

$$y = \frac{1}{1 + \cos x}$$

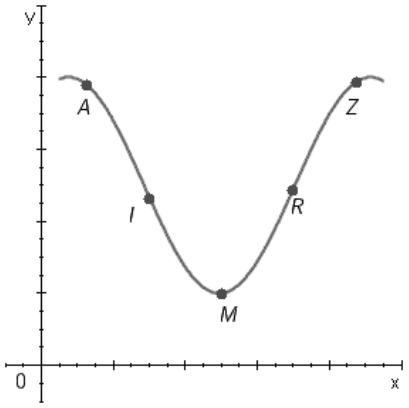
a. $x = 2\pi n$, n an integer

b. $x = \pi + 2\pi n$, n an integer

c. $x = -\frac{\pi}{4} + \pi n$, n an integer

d. $x = \frac{\pi}{4} + \pi n$, n an integer

4 Consider the slope of the given curve at each of the five points shown below.



List these five slopes in decreasing order. Separate the letters with commas.

_____

5 Find a function g that agrees with f for $x \neq 36$ and is continuous on $\mathbb{R}$

$$f(x) = \frac{6 - \sqrt{x}}{36 - x}$$

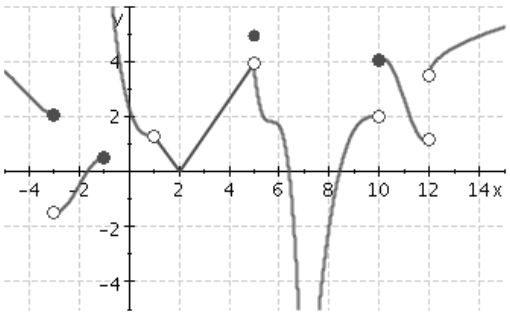
a. $g(x) = \frac{1}{6 + x}$

b. $g(x) = \frac{1}{36 + x}$

c. $g(x) = \frac{1}{6 + \sqrt{x}}$

d. $g(x) = \frac{1}{6 - \sqrt{x}}$

6 For $x = 5$, determine whether f is continuous from the right, or from the left, or either, or neither.



_____

ANSWER KEY

Name: _____ Class:___ Date: _____ (copy B)

1. a
2. 31
3. b
4. R,Z,M,A,I
5. c
6. neither