

Student
Starlan Davis

Total Points
2 / 10 pts

Question 1
(no title)

1 / 6 pts

0 / 2 pts

- 1.1 (no title) 0 pts Correct 1 / 6 pts 0 / 2 pts
- 1.2 (no title) 0 pts Correct 0 / 2 pts
- 1.3 (no title) 1 / 2 pts 1 / 2 pts

Question 2
(no title)

1 / 4 pts

0 pts Correct

4 pts Click here to replace this description.

3 pts Click here to replace this description.

2 pts Click here to replace this description.

Quiz 1, Section 555

Name: Starlan Davis

1) Evaluate the limits (show your work).

$$a) \lim_{x \rightarrow 5^-} \frac{4x}{x-5} = \frac{4(5)}{(5)-5} = \frac{20}{-10} = \boxed{-2}$$

$$\lim_{x \rightarrow 8^-} \frac{4x}{x-8} = -28$$

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

↑ if $\frac{4x}{-x-8}$ or ↓ if $\lim_{x \rightarrow 8^-}$

$$\frac{4(4.9999)}{4.9999-5} = \frac{24.9996}{-0.0001}$$

$$\frac{4 \times 4.9999}{4.9999-5} = \frac{19.9996}{-0.0001}$$

$\boxed{-28}$

$$b) \lim_{x \rightarrow 0} \frac{\sin 5x}{6x} = \frac{\sin 5(0)}{6(0)}$$

$$\frac{\sin(x)}{x} \cdot \frac{5}{6} \rightarrow \frac{1}{1} \cdot \frac{5}{6}$$

$$\frac{\sin(x)}{x} = 1$$

$\boxed{\frac{5}{6}}$

$$c) \lim_{x \rightarrow -\infty} \frac{5x^7 - 2x^5 + 8}{2x^3 + 7x^2 - 4}$$

$\boxed{-\infty}$

2) Find a value for C that makes the function continuous.

$$f(x) = \begin{cases} 8x + 9x^{-1}, & x \geq 3 \\ -4x + C, & x < 3 \end{cases}$$

$$C = \left(36 + \frac{1}{27}\right) \text{ or } \left(\frac{973}{27}\right)$$

$$8(3) + 9(3)^{-1} \rightarrow 8(3) + \frac{1}{9(3)} = 24 + \frac{1}{27}$$

$$-4(3) + C = -12 + C$$

$$24 + \frac{1}{27} = -12 + C$$

$$36 + \frac{1}{27} = C$$

$$\frac{36}{1} + \frac{1}{27} \rightarrow \frac{972}{27} + \frac{1}{27} = \frac{973}{27}$$