Tests & Quizzes

Quiz 4.1

Return to Assessment List

Part 1 of 1 - A1 10.0 Points

Question 1 of 5

2.0 Points

Which definition is the best one to use to prove the following result:

$f(x) = \frac{-5}{x}$ is not continuous

- ✔ ◯ **A. None of the above.**
- ✔ ◯ **B.** $\forall \varepsilon > 0, \exists \delta > 0, (|x - a| < \delta \Rightarrow |f(x) - f(a)| < \varepsilon)$
- ✔ ◯ **C.** $\exists \varepsilon > 0, \forall \delta > 0, \exists x \text{ with } 0 < |x - a| < \delta \text{ such that } |f(x) - L| \geq \varepsilon$
- ✔ ◯ **D.** $\forall \varepsilon > 0, \exists \delta > 0, (0 < |x - a| < \delta \rightarrow |f(x) - L| < \varepsilon)$
- ✔ ◯ **E.** $\forall A > 0, \exists K > 0, (x > K \rightarrow f(x) > A)$
- ✔ ◯ **F.** $\forall K > 0, \exists \delta > 0, (0 < |x - a| < \delta \rightarrow f(x) > K)$

Answer Key: A

Question 2 of 5

2.0 Points

Which definition is the best one to use to prove the following result:

$f(x) = 3x^4$ is continuous

- ✔ ○ **A.** $\exists \varepsilon > 0, \forall \delta > 0, \exists x \text{ with } 0 < |x - a| < \delta \text{ such that } |f(x) - L| \geq \varepsilon$
- ✔ ○ **B. None of the above.**
- ✔ ○ **C.** $\forall A > 0, \exists K > 0, (x > K \rightarrow f(x) > A)$
- ✔ ○ **D.** $\forall \varepsilon > 0, \exists \delta > 0, (|x - a| < \delta \Rightarrow |f(x) - f(a)| < \varepsilon)$
- ✔ ○ **E.** $\forall \varepsilon > 0, \exists \delta > 0, (0 < |x - a| < \delta \rightarrow |f(x) - L| < \varepsilon)$
- ✔ ○ **F.** $\forall K > 0, \exists \delta > 0, (0 < |x - a| < \delta \rightarrow f(x) > K)$

Answer Key: D

Question 3 of 5

2.0 Points

Which definition is the best one to use to prove the following result:

$$\lim_{x \to \infty} \left(\frac{5x^2 + 1}{3x} \right) = \infty$$

- ✔ ○ **A.** $\forall K > 0, \exists \delta > 0, (0 < |x - a| < \delta \rightarrow f(x) > K)$
- ✔ ○ **B. None of the above.**
- ✔ ○ **C.** $\forall K < 0, \exists \delta > 0, (0 < |x - a| < \delta \rightarrow f(x) < K)$
- ✔ ○ **D.** $\forall \varepsilon > 0, \exists K > 0, (x > K \rightarrow |f(x) - L| < \varepsilon)$
- ✔ ○ **E.** $\forall A > 0, \exists K > 0, (x > K \rightarrow f(x) > A)$
- ✔ ○ **F.** $\forall \varepsilon > 0, \exists \delta > 0, (|x - a| < \delta \Rightarrow |f(x) - f(a)| < \varepsilon)$

Answer Key: E

Question 4 of 5

2.0 Points

Which definition is the best one to use to prove the following result:

$$\lim_{x\to\infty}\left(\frac{x+1}{x^2-1}\right)=0$$

- ✔ ○ **A.** $\forall A>0,\exists K>0,(x>K\rightarrow f(x)>A)$
- ✔ ○ **B.** $\forall\varepsilon>0,\exists\delta>0,(|x-a|<\delta\Rightarrow|f(x)-f(a)|<\varepsilon)$
- ✔ ○ **C.** $\forall\varepsilon>0,\exists K>0,(x>K\rightarrow|f(x)-L|<\varepsilon)$
- ✔ ○ **D. None of the above.**
- ✔ ○ **E.** $\forall\varepsilon>0,\exists\delta>0,(0<|x-a|<\delta\rightarrow|f(x)-L|<\varepsilon)$
- ✔ ○ **F.** $\forall K>0,\exists\delta>0,(0<|x-a|<\delta\rightarrow f(x)>K)$

Answer Key: C

Question 5 of 5

2.0 Points

Which definition is the best one to use to prove the following result:

$f(x)=4x^3$ is continuous

- ✔ ○ **A.** $\forall\varepsilon>0,\exists\delta>0,(|x-a|<\delta\Rightarrow|f(x)-f(a)|<\varepsilon)$
- ✔ ○ **B.** $\forall A>0,\exists K>0,(x>K\rightarrow f(x)>A)$
- ✔ ○ **C.** $\forall\varepsilon>0,\exists\delta>0,(0<|x-a|<\delta\rightarrow|f(x)-L|<\varepsilon)$
- ✔ ○ **D.** $\exists\varepsilon>0,\forall\delta>0,\exists x$ with $0<|x-a|<\delta$ such that $|f(x)-L|\geq\varepsilon$
- ✔ ○ **E. None of the above.**
- ✔ ○ **F.** $\forall K>0,\exists\delta>0,(0<|x-a|<\delta\rightarrow f(x)>K)$

Answer Key: A

- Gateway
- Mobile View
- The Sakai Project

- Powered by Sakai
-

Change Profile Picture

Error removing image
Error uploading image
Upload Choose File No file chosen

Save Cancel Connections ✖ Remove

Search for people ...
View More

My Connections | Pending Connections

You don't have any connnections yet. Search for people above to get started.
You have no pending connections.
←Back to My Connections
Search for people ...
$({cmLoader.getString("connection_manager_no_results")}

Done