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NPTEL

Courses » Basic Calculus for Engineers, Scientists and Economists

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Unit 2 - Week 01 - Numbers, Functions, Sequencs and Limits of Functions

Assignment-1

The due date for submitting this assignment has passed. **Due on 2017-02-07, 23:59 IST.**
As per our records you have not submitted this assignment.

1) $1. Solving\ this\ inequality,$ ***1 point***
$|\frac{z}{5} - 1| \leq 1.$
$We\ get\ z \leq b,\ then$

○
$b = 0.$
○
$b = 5.$
○
$b = 10.$
○
$b = 2.$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$b = 10.$

2) $2. Let\ a\ and\ b\ are\ two\ irrational\ numbers.\ Then$ ***1 point***

○
$ab\ is\ always\ rational.$
○
$ab\ is\ always\ irrational.$
○
$ab\ may\ be\ rational.$
○
$None\ of\ these\ are\ true.$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$ab\ may\ be\ rational.$

3) $3. For\ the\ function\ f(x) = 2e^{-x} - 3\ with\ dom\ f = (-\infty, +\infty),\ then$ ***1 point***

○
$range\ of\ f = (-3, +\infty).$
○
$range\ of\ f = (-1, +\infty).$
○

$rangeoff = (3, +\infty).$

○

$rangeoff = (-3, -1).$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$rangeoff = (-3, +\infty).$

4) $4. The\ function\ whose\ value\ at\ any\ number\ x\ is\ the\ greatest\ integer$ **1 point**
$less\ than\ or\ equal\ to\ x\ is\ called\ the\ greatest\ integer\ function.\ It\ is$
$denoted\ by\ \lfloor x \rfloor,\ then\ which\ of\ the\ following\ statement\ is\ true$

○

$\lfloor 5.9 \rfloor = 6.$

○

$\lfloor 2.4 \rfloor = 3.$

○

$\lfloor -5.9 \rfloor = -5.$

○

$\lfloor -2.4 \rfloor = -3.$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$\lfloor -2.4 \rfloor = -3.$

5) $5. If\ f\ and\ g\ are\ two\ continuous\ function\ at\ x = c,\ then\ at\ x = c$ **1 point**

○

$f + g\ may\ not\ be\ continuous.$

○

$f \circ g\ is\ always\ continuous.$

○

$fg\ may\ not\ be\ continuous.$

○

$\frac{f}{g}\ where\ g(c) \neq 0\ is\ not\ continuous.$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$f \circ g\ is\ always\ continuous.$

6) $6. \lim_{y \to 0} \frac{\sin 3y \cot 5y}{y \cot 4y} =$ **1 point**

○

$\frac{4}{15}.$

○

$\frac{12}{5}.$

○

$3.$

○

$Can\ not\ be\ determined.$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$\frac{12}{5}.$

7) $7. Let\ x_0 = 1,\ x_{n+1} = 3x_n - 2,\ then\ \{x_n\}\ converges\ to$ **1 point**

○

$\frac{2}{3}$.

◯

0.

◯

-1.

◯

1.

No, the answer is incorrect.
Score: 0

Accepted Answers:
1.

8) 8.$Let\ f(x) = \begin{cases} \frac{x^2}{4}, & if\ x < 2 \\ e^{ax}, & if\ x \geq 2. \end{cases}$, $then\ f(x)\ is\ continuous\ at\ x = 2\ for$

1 point

◯

$a = \frac{1}{2}$.

◯

$a = \log \frac{1}{2}$.

◯

$a = 0$.

◯

$a = \log \frac{1}{4}$.

No, the answer is incorrect.
Score: 0

Accepted Answers:
$a = 0$.

9) 9.$Every\ Cauchy\ sequence\ has\ a\ convergent\ subsequence.$

1 point

◯

$True$.

◯

$False$.

No, the answer is incorrect.
Score: 0

Accepted Answers:
$True$.

10) 10.$The\ function\ f(x) = \log(\sin x^2)\ is\ continuous\ at\ x = \frac{\pi}{2}$.

1 point

◯

$True$.

◯

$False$.

No, the answer is incorrect.
Score: 0

Accepted Answers:
$True$.

Previous Page　　　　　　　　　　End

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