[PRINT]

21S1 MH1810,
SCSE HENDY, 9/28/21 at 12:42:28 AM SGT

Question1: *Score 1/1*

The graphs, $y = f(x)$, where $f(x) = \begin{cases} x^2 + 1 & \text{if} \quad x \leq 1 \\ x + 3 & \text{if} \quad x > 1 \end{cases}$ and $y = g(x)$, where $g(x) = 2x$ are as follows.

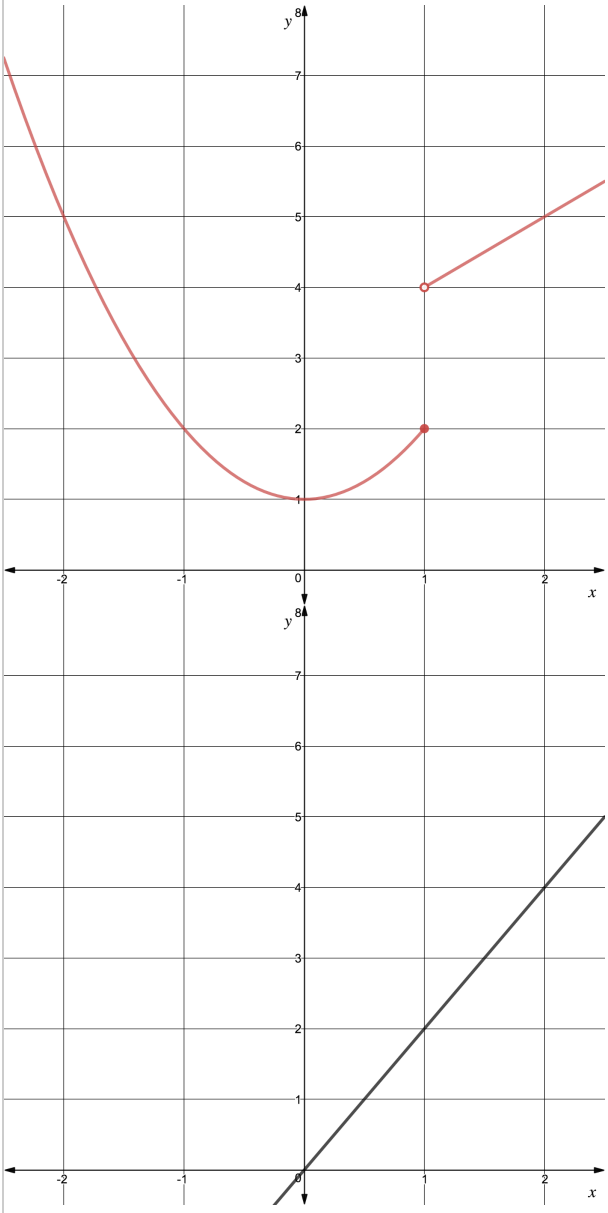

Figure 1. The graph $y = f(x)$

Figure 2. The graph $y = g(x)$

Find the value of

a).	$f(-1) =$

Your response	Correct response
2	
Auto graded	**Grade:** 1/1.0 ✔

,

b).	$f\left(3\right) =$

Your response	Correct response
6	
Auto graded	**Grade:** 1/1.0 ✔

,

c).	$f(g(0.5)) =$

Your response	Correct response
2	
Auto graded	**Grade:** 1/1.0 ✔

,

d).	$\lim_{x \to 0.5^-} f(g(x)) =$

Your response	Correct response
2	
Auto graded	**Grade:** 1/1.0 ✔

,

e).	$\lim_{x \to 0.5^+} f(g(x)) =$

Your response	Correct response
4	
Auto graded	**Grade:** 1/1.0 ✔

.

✔ Total grade: 1.0×1/5 + 1.0×1/5 + 1.0×1/5 + 1.0×1/5 + 1.0×1/5 = 20% + 20% + 20% + 20% + 20%

Question2: *Score 1/1*

Determine the following limit

$$\lim_{x\to 4}\frac{x^3-4^3}{\sqrt{x}-2}$$

if it exists. Enter 'NA' (without the quotation marks) if limit does not exist.

Answer :

Your response	Correct response
192	

Auto graded Grade: 1/1.0

Total grade: 1.0×1/1 = 100%

Question3: *Score 1/1*

Determine the following limit

$$\lim_{x\to 7}\frac{\sqrt{x+21}-2\sqrt{x}}{\sqrt{3x+7}-\sqrt{14+2x}}$$

if it exists. Enter 'NA' (without the quotation marks) if limit does not exist.

Answer :

Your response	Correct response
-3	

Auto graded Grade: 1/1.0

Total grade: 1.0×1/1 = 100%

Question4: *Score 1/1*

Determine the following limit

$$\lim_{x\to -\infty}\sqrt{x^2+6x+28}+x$$

if it exists. Enter 'NA' (without the quotation marks) if limit does not exist.

Answer :

Your response	Correct response
-3	

Auto graded Grade: 1/1.0

Total grade: 1.0×1/1 = 100%

Question5: *Score 0/1*

Determine the following limit

$$\lim_{x\to\frac{\pi}{4}} \frac{\cos^{16}(2x)}{2^{16}\left(\sqrt{\cos(x)}-\sqrt{\sin(x)}\right)^{16}}$$

if it exists. Enter 'NA' (without the quotation marks) if limit does not exist.

Answer :

Your response	Correct response
32	**16**

Auto graded **Grade:** 0/1.0

Total grade: 0.0×1/1 = 0%

Question6: *Score 1/1*

If $\lim_{x\to 0} \frac{f(x)}{x^2} = 12$, find the limit $\lim_{x\to 0} \frac{f(x)}{x}$.

Answer :

Your response	Correct response
0	

Auto graded **Grade:** 1/1.0

Total grade: 1.0×1/1 = 100%

Question7: *Score 1/1*

Suppose $f(x) = ax + b$ and $\lim_{x\to 4} \frac{\sqrt{x}-2}{f(x)} = \frac{1}{8}$. Find a and b.

Answer :

$a =$

Your response	Correct response
2	

Auto graded **Grade:** 1/1.0

$b =$

Your response	Correct response
-8	

Auto graded **Grade:** 1/1.0

Total grade: 1.0×1/2 + 1.0×1/2 = 50% + 50%

Question8: *Score 0/1*

Determine the limit

$$\lim_{x\to 0}\frac{x^3+\sin^2(4x)}{10x^2+\sin(x)\tan(-6x)}$$

if it exists. Enter 'NA' (without the quotation marks) if limit does not exist.

Answer :

Your response	Correct response
1	**4**

Auto graded **Grade:** 0/1.0

Total grade: 0.0×1/1 = 0%

Question9: *Score 1/1*

Determine the limit

$$\lim_{x\to -\infty} 3^{x+\sin(-4x)}$$

if it exists. Enter 'NA' (without the quotation marks) if limit does not exist.

Answer :

Your response	Correct response
0	

Auto graded **Grade:** 1/1.0

Total grade: 1.0×1/1 = 100%

Question10: *Score 1/1*

Determine the limit

$$\lim_{x\to\infty} \frac{\sin(x)+\sin(7x)}{3x+\sin(6x)}$$

if it exists. Enter 'NA' (without the quotation marks) if limit does not exist.

Answer :

Your response	Correct response
0	

Auto graded Grade: 1/1.0

Total grade: 1.0×1/1 = 100%

Question11: *Score 1/1*

Determine the limit

$$\lim_{x\to 0^+} \frac{\sin(x)\sin\left(\frac{6}{x}\right)}{\sqrt{x}}$$

if it exists. Enter 'NA' (without the quotation marks) if limit does not exist.

Answer :

Your response	Correct response
0	

Auto graded Grade: 1/1.0

Total grade: 1.0×1/1 = 100%

Question12: *Score 1/1*

Determine the limit

$$\lim_{x\to\infty} \left(\frac{1}{6}|\sin(7x)+\cos(7x)|\right)^x$$

if it exists. Enter 'NA' (without the quotation marks) if limit does not exist.

Answer :

Your response	Correct response
0	

Auto graded Grade: 1/1.0

Total grade: 1.0×1/1 = 100%

Question13: *Score 1/1*

Determine the range of the function

$$f(x) = \frac{1}{2}\sqrt{4x + 4\sqrt{2x}}\,,$$

where $x \in [0, 2]$

Answer: The range of f is $[a, b]$, where

$a =$

Your response	Correct response
0	

Auto graded **Grade:** 1/1.0

$b =$

Your response	Correct response
2	

Auto graded **Grade:** 1/1.0

Total grade: 1.0×1/2 + 1.0×1/2 = 50% + 50%

Question14: *Score 1/1*

Determine the range of the function

$$f(x) = \Big|1 + \Big|x^2 - 9\Big|\Big|$$

where $x \in [0, 6]$.

Answer : The range of the function f is $[a, b]$, where

$a =$

Your response	Correct response
1	

Auto graded **Grade:** 1/1.0

$b =$

Your response	Correct response
28	

Auto graded **Grade:** 1/1.0

Total grade: 1.0×1/2 + 1.0×1/2 = 50% + 50%

Question15: *Score 1/1*

Determine the range of the function $f(x) = \sin(x) + |7\sin(x)|$.

Answer : The range of f is $[a, b]$ where

$a =$

Your response	Correct response
0	

Auto graded **Grade:** 1/1.0

$b =$

Your response	Correct response
8	

Auto graded **Grade:** 1/1.0

Total grade: 1.0×1/2 + 1.0×1/2 = 50% + 50%