[PRINT]

21S1 MH1810,
SCSE HENDY, 11/9/21 at 7:49:23 PM SGT

Question1: *Score 1/1*

Find

$$\frac{\mathrm{d}}{\mathrm{d}x}\int_{-x^2}^{0}\sin\left(8t^2\right)\mathrm{d}t$$

Use a pair of parentheses "( )" when enter a function, e.g., enter sin(x) instead of sinx. Also it is necessary to use " * " for product.

Answer :

Your response	Correct response
2x*sin(8x^4)	

Auto graded Grade: 1/1.0

Total grade: 1.0×1/1 = 100%

Question2: *Score 1/1*

If

$$\int_0^{12} f(x)\mathrm{d}x = 20,$$

find the value of

$$\int_1^{e^3} \frac{f(4\ln(x))}{x}\mathrm{d}x.$$

Answer :

Your response	Correct response
5	

Auto graded Grade: 1/1.0

Total grade: 1.0×1/1 = 100%

Question3: *Score 0/1*

Find

$$\int \frac{1}{x^2(x-4)}\,\mathrm{d}x.$$

Note : Use a pair of parentheses "( )" when you enter a function. E.g., enter $\ln(|x|)$ instead of $\ln|x|$. Also, please be reminded that it is necessary to insert " * " in a product.

Reminder: Do not include " + C " in your answer.

Answer :

Your response	Correct response
ln(abs(x))/16+1/(4*x)+ln(abs(x-4))/16	**(x*ln(abs(x-4))+4-x*ln(abs(x)))/((4)^2*x)**

Auto graded Grade: 0/1.0

Total grade: 0.0×1/1 = 0%

Question4: *Score 1/1*

Find

$$\int x^7 \sin\left(12+x^4\right)\,\mathrm{d}x.$$

Note : Use a pair of parentheses "( )" for functions. E.g., enter sin(x) instead of sinx.

It is necessary to include multiplication sign " * " in a product.

Reminder: Do not include " + C " in your answer.

Answer :

Your response	Correct response
(sin(x^4+12)-x^4*cos(x^4+12))/4	

Auto graded Grade: 1/1.0

Total grade: 1.0×1/1 = 100%

Question5: *Score 1/1*

Let a be the integer that satisfies

$$\int_0^{a\pi} \cos^4(x)\,\mathrm{d}x = 21\pi.$$

Find a.

Answer :

Your response	Correct response
56	

Auto graded **Grade:** 1/1.0

Total grade: 1.0×1/1 = 100%

Question6: *Score 1/1*

Evaluate

$$\lim_{n\to\infty}\sum_{k=1}^{n}\frac{1}{\sqrt{n}}\frac{1}{\sqrt{8k+n}}.$$

Express the answer as a fraction.

Answer :

Your response	Correct response
1/2	

Auto graded **Grade:** 1/1.0

Total grade: 1.0×1/1 = 100%

Question7: *Score 0/1*

Evaluate

$$\lim_{n\to\infty}\left(\frac{1}{n+1}+\frac{1}{n+2}+\frac{1}{n+3}+\cdots+\frac{1}{6n}\right).$$

Note : Use a pair of parentheses "( )" when enter a function, e.g., enter $\ln(a)$ instead of $\ln a$.

Answer :

Your response	Correct response
ln(2)	**ln(6)**

Auto graded **Grade:** 0/1.0

Total grade: 0.0×1/1 = 0%

Question8: *Score 1/1*

The speed of a runner during the first six seconds is recored (see the table below).

t (s)	v (m/s)
0	0
1	3
2	5
3	7
4	8
5	10
6	11

Estimate the distance the runner covered during those six seconds using **Trapezoidal Rule**. Express your answer in fraction.

Answer :

Your response	Correct response
77/2	

Auto graded **Grade:** 1/1.0

Total grade: 1.0×1/1 = 100%

Question9: *Score 1/1*

The speed of a runner during the first six seconds is recored (see the table below).

t (s)	v (m/s)
0	0
1	3
2	5
3	7
4	9
5	10
6	11

Estimate the distance the runner covered during those six seconds using **Simpson's Rule**. Express your answer in fraction.

Answer :

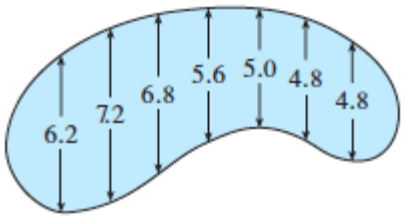
Your response	Correct response
119/3	

Auto graded **Grade:** 1/1.0

Total grade: 1.0×1/1 = 100%

Question10: *Score 1/1*

Let R be the region as shown in the figure below. The widths, in meter, of R is measured at 1-meter intervals.



Estimate the area of R by using **Simpson's Rule.** Express your answer in 2 decimal places.

Answer :

Your response	Correct response
42.13	

Auto graded **Grade:** 1/1.0

Total grade: 1.0×1/1 = 100%

Question11: *Score 1/1*

Find

$$\int_{-6}^{6} \frac{1+8x\cos(x)}{\pi\left(36+x^2\right)}\,\mathrm{d}x.$$

Hint : The product of an even function and an odd function is an odd function.

Answer :

Your response	Correct response
1/12	

Auto graded **Grade:** 1/1.0

Total grade: 1.0×1/1 = 100%

Question12: *Score 0/1*

Find

$$\int_{-\infty}^{\infty} \frac{x^2}{\pi\left(9+x^6\right)}\,\mathrm{d}x.$$

Answer :

Your response	Correct response
1/6	**-1/-9**

Auto graded Grade: 0/1.0

Total grade: 0.0×1/1 = 0%

Question13: *Score 1/1*

Let R be the region bounded by the curve $9x = y^2$ and the line $y = 3x - 6$. Find the area of R.

Answer :

Your response	Correct response
27/2	

Auto graded Grade: 1/1.0

Total grade: 1.0×1/1 = 100%

Question14: *Score 1/1*

The region R is bounded by x-axis, y-axis, the vertical line $x = \frac{\sqrt{\pi}}{3}$ and the graph $y = \frac{1}{\pi}\sin\left(9x^2\right)$. Find the volume of the solid obtained by rotating R about y-axis by 2π radians.

Answer :

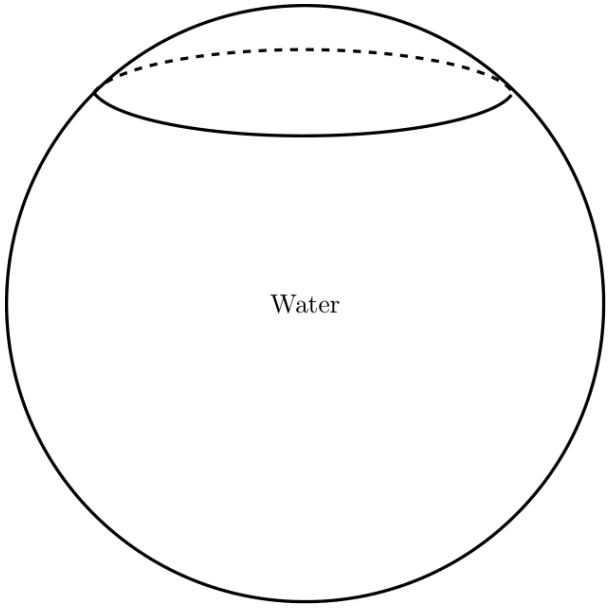
Your response	Correct response
2/9	

Auto graded Grade: 1/1.0

Total grade: 1.0×1/1 = 100%

Question15: *Score 1/1*

Consider a ball-shaped water tank (as shown below) with radius $R = 6$ m.



Find the volume of the water when the depth of the water is 9 m.

Answer :

Your response	Correct response
243*Pi	

Auto graded **Grade:** 1/1.0

Total grade: 1.0×1/1 = 100%