

1)  $\int_0^3 e^x dx = ?$

Choose 1 answer:

A  $\lim_{n \rightarrow \infty} \sum_{i=1}^n \frac{2}{n} \cdot e^{2i/n}$

B  $\lim_{n \rightarrow \infty} \sum_{i=1}^n \frac{3}{n} \cdot e^{2i/n}$

C  $\lim_{n \rightarrow \infty} \sum_{i=1}^n \frac{3}{n} \cdot e^{3i/n}$

D  $\lim_{n \rightarrow \infty} \sum_{i=1}^n \frac{1}{n} \cdot e^{i/n}$

2)  $\int_1^e \ln x dx = ?$

Choose 1 answer:

A  $\lim_{n \rightarrow \infty} \sum_{i=1}^n \frac{e-1}{n} \cdot \ln \left( \frac{e-1}{n} \cdot i \right)$

B  $\lim_{n \rightarrow \infty} \sum_{i=1}^n \frac{e}{n} \cdot \ln \left( 1 + \frac{ei}{n} \right)$

C  $\lim_{n \rightarrow \infty} \sum_{i=1}^n \frac{e}{n} \cdot \ln \left( 1 + \frac{i}{n} \right)$

D  $\lim_{n \rightarrow \infty} \sum_{i=1}^n \frac{e-1}{n} \cdot \ln \left( 1 + \frac{e-1}{n} \cdot i \right)$

3)  $\lim_{n \rightarrow \infty} \sum_{i=1}^n \sqrt{4 + \frac{5i}{n}} \cdot \frac{5}{n} = ?$

Choose 1 answer:

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(A)  $\int_4^9 \sqrt{4+x} \, dx$

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(B)  $\int_0^5 \sqrt{x} \, dx$

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(C)  $\int_4^9 \sqrt{x} \, dx$

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(D)  $\int_0^4 \sqrt{4+x} \, dx$

4)  $\lim_{n \rightarrow \infty} \sum_{i=1}^n \ln \left( 2 + \frac{5i}{n} \right) \cdot \frac{5}{n}$

Choose 1 answer:

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(A)  $\int_0^5 \ln x \, dx$

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(B)  $\int_2^5 \ln x \, dx$

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(C)  $\int_0^7 \ln x \, dx$

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(D)  $\int_2^7 \ln x \, dx$

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Which of the definite integrals is equivalent to the following limit?

5) 
$$\lim_{n \rightarrow \infty} \sum_{i=1}^n 4 \cdot \frac{5}{n}$$

Choose 1 answer:

(A)  $\int_0^4 5x \, dx$

(B)  $\int_0^5 4x \, dx$

(C)  $\int_0^4 5 \, dx$

(D)  $\int_0^5 4 \, dx$

6)

Which of the definite integrals is equivalent to the following limit?

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n \cos \left( \frac{\pi}{2} + \frac{\pi i}{2n} \right) \cdot \frac{\pi}{2n}$$

Choose 1 answer:

(A)  $\int_{\pi/2}^{\pi} \cos x \, dx$

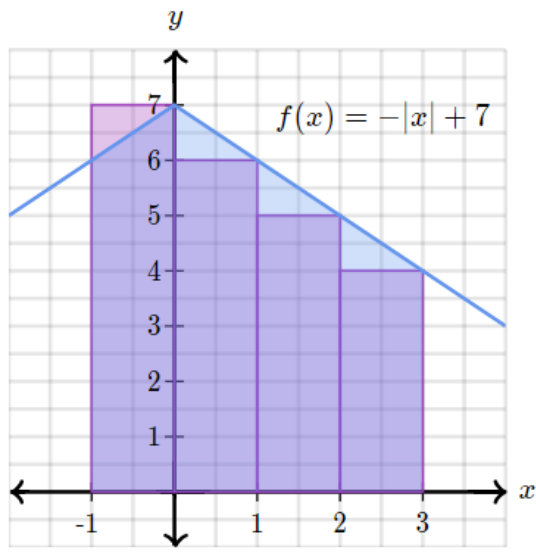
(B)  $\int_0^{\pi/2} \cos x \, dx$

(C)  $\int_0^{\pi} \cos x \, dx$

(D)  $\int_{\pi/2}^{3\pi/4} \cos x \, dx$

7)

The following graph shows a Riemann sum:



Which of the following approximates the area between  $f(x)$  and the  $x$ -axis on the interval  $[-1, 3]$  using a *right Riemann sum* with 4 equal subdivisions?

Choose 1 answer:

(A)  $\sum_{i=-1}^3 -|i-1| + 7$

(B)  $\sum_{i=-1}^3 (-|0.75i - 0.25| + 7) \cdot 0.75$

(C)  $\sum_{i=1}^4 (-|0.75i - 1.75| + 7) \cdot 0.75$

(D)  $\sum_{i=1}^4 -|i-1| + 7$

## ANSWERS

1) C

2) D

3) C

4) D

5) D

6) A

7) D