

Directions: Beginning in the first cell marked #1, find the requested information. To advance in the circuit, hunt for your answer and mark that cell #2. Continue working in this manner until you complete the circuit. For all the following problems use a right hand Riemann sum with equal partitions.

<p><u>1</u> Ans: $\int_3^5 \sqrt{x^3 + 1} dx$</p> <p>Find a limit equal to $\int_0^4 (x^2 + 1) dx$.</p>	<p>_____ Ans: $\lim_{n \rightarrow \infty} \sum_{k=1}^n \ln \left(\frac{8}{n} k + 1 \right) \frac{4}{n}$</p> <p>Find a limit equal to $\int_3^7 (x^2 - 8) dx$.</p>
<p>_____ Ans: $\int_2^4 (x^2 + 1) dx$</p> <p>Find an integral expression equal to:</p> $\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\left(\frac{2}{n} k \right)^3 + 3 \right) \frac{2}{n}.$	<p>_____ Ans: $\int_0^2 (x^3 + 2) dx$</p> <p>Find an integral expression equal to:</p> $\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\sqrt{\left(\frac{2}{n} k + 3 \right) + 1} \right) \frac{2}{n}.$

_____ Ans: $\lim_{n \rightarrow \infty} \sum_{k=1}^n \ln\left(\frac{4}{n}k + 1\right) \left(\frac{4}{n}\right)$

Find an integral expression equal to:

$$\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\left(\frac{2}{n}k + 3 \right) + 1 \right) \frac{2}{n}$$

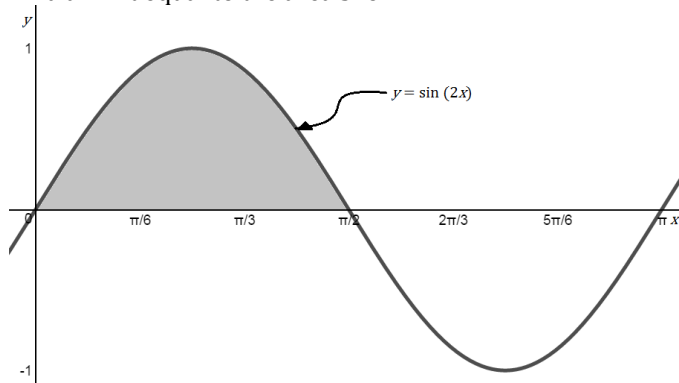
_____ Ans: $\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\sqrt{\frac{16}{n}k + 9} \right) \frac{4}{n}$

Find an integral expression equal to:

$$\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\left(\frac{2}{n}k \right)^2 + 3 \right) \frac{2}{n}$$

_____ Ans: $\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\frac{16}{n^2}k^2 + \frac{24}{n}k + 1 \right) \frac{4}{n}$

Find a limit equal to the area shown.



_____ Ans: $\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\frac{16}{n^2}k^2 + 1 \right) \frac{4}{n}$

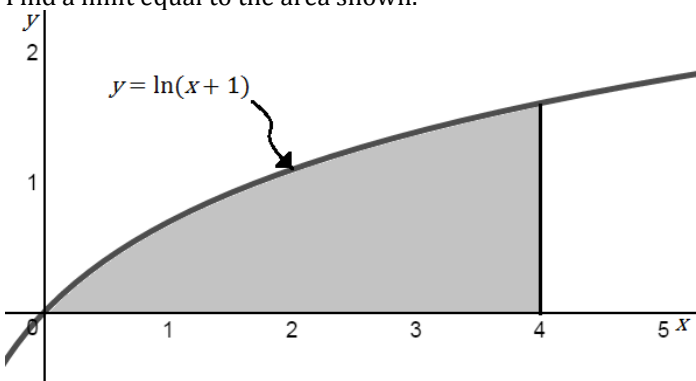
Find a limit equal to $\int_0^{\pi/2} \cos(2x) dx$.

_____ Ans: $\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\cos\left(\frac{\pi}{n}k\right) \right) \frac{\pi}{2n}$

Find a limit equal to $\int_3^7 \sqrt{4x-3} dx$.

_____ Ans: $\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\sqrt{\frac{4}{n}k + 2} \right) \frac{4}{n}$

Find a limit equal to the area shown.



_____ Ans: $\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\sin\left(\frac{\pi}{n}k\right) \right) \frac{\pi}{2n}$

Find an integral expression equal to:

$$\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\left(\frac{2}{n}k\right)^3 + 2 \right) \frac{2}{n}$$

_____ Ans: $\int_3^5 (x+1) dx$

Find an integral expression equal to:

$$\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\sqrt{\left(\frac{2}{n}k + 3\right)^3 + 1} \right) \frac{2}{n}$$

_____ Ans: $\int_3^5 \sqrt{x+1} dx$

Find an integral expression equal to:

$$\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\left(\frac{2}{n}k + 2 \right)^2 + 1 \right) \frac{2}{n}$$

_____ Ans: $\int_0^2 (x^2 + 3) dx$

Find an integral expression equal to:

$$\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\sqrt{\left(\frac{2}{n}k + 3 \right)^2 + 1} \right) \frac{2}{n}$$

_____ Ans: $\int_3^5 \sqrt{x^2 + 1} dx$

Find a limit equal to $\int_1^5 \ln(2x - 1) dx$.

_____ Ans: $\int_0^2 (x^3 + 3) dx$

Find a limit equal to the area shown.

