$f := x \to \sqrt{x^2 - \sin(x)}$

$$f := x \mapsto \sqrt{x^2 - \sin(x)} \tag{1}$$

$f(\mathrm{Pi})$

$$\pi \tag{2}$$

$f\left(\dfrac{\mathrm{Pi}}{2}\right)$

$$\frac{\sqrt{\pi^2 - 4}}{2} \tag{3}$$

$MyLeft := (n, a, b) \to \dfrac{6}{n} \cdot \displaystyle\sum_{k=1}^{n} f\left(a + (k-1) \cdot \dfrac{(b-a)}{n}\right)$

$$MyLeft := (n, a, b) \mapsto \frac{6 \cdot \left(\displaystyle\sum_{k=1}^{n} f\left(a + \dfrac{(k-1) \cdot (b-a)}{n}\right)\right)}{n} \tag{4}$$

$g(5, 1, 7)$

$$\frac{6\sqrt{1 - \sin(1)}}{5} + \frac{6\sqrt{\dfrac{121}{25} - \sin\left(\dfrac{11}{5}\right)}}{5} + \frac{6\sqrt{\dfrac{289}{25} - \sin\left(\dfrac{17}{5}\right)}}{5} \tag{5}$$

$$+ \frac{6\sqrt{\dfrac{529}{25} - \sin\left(\dfrac{23}{5}\right)}}{5} + \frac{6\sqrt{\dfrac{841}{25} - \sin\left(\dfrac{29}{5}\right)}}{5}$$

$evalf(\%)$

$$19.66809235 \tag{6}$$

$MyRight := (n, a, b) \to \dfrac{6}{n} \cdot \displaystyle\sum_{k=1}^{n} f\left(a + k \cdot \dfrac{(b-a)}{n}\right)$

$$MyRight := (n, a, b) \mapsto \frac{6 \cdot \left(\displaystyle\sum_{k=1}^{n} f\left(a + \dfrac{k \cdot (b-a)}{n}\right)\right)}{n} \tag{7}$$

$MyRight(5, 1, 7)$

$$\frac{6\sqrt{\dfrac{121}{25} - \sin\left(\dfrac{11}{5}\right)}}{5} + \frac{6\sqrt{\dfrac{289}{25} - \sin\left(\dfrac{17}{5}\right)}}{5} + \frac{6\sqrt{\dfrac{529}{25} - \sin\left(\dfrac{23}{5}\right)}}{5} \tag{8}$$

$$+ \frac{6\sqrt{\dfrac{841}{25} - \sin\left(\dfrac{29}{5}\right)}}{5} + \frac{6\sqrt{49 - \sin(7)}}{5}$$

$evalf(\%)$

$$27.53380075 \tag{9}$$

$$MyTrap := (n, a, b) \rightarrow \frac{1}{2} \cdot (MyLeft(n, a, b) + MyRight(n, a, b))$$

$$MyTrap := (n, a, b) \mapsto \frac{MyLeft(n, a, b)}{2} + \frac{MyRight(n, a, b)}{2} \tag{10}$$

$MyTrap(5, 1, 7)$

$$\frac{3\sqrt{1 - \sin(1)}}{5} + \frac{6\sqrt{\frac{121}{25} - \sin\left(\frac{11}{5}\right)}}{5} + \frac{6\sqrt{\frac{289}{25} - \sin\left(\frac{17}{5}\right)}}{5} \tag{11}$$

$$+ \frac{6\sqrt{\frac{529}{25} - \sin\left(\frac{23}{5}\right)}}{5} + \frac{6\sqrt{\frac{841}{25} - \sin\left(\frac{29}{5}\right)}}{5} + \frac{3\sqrt{49 - \sin(7)}}{5}$$

$evalf(\%)$

$$23.60094655 \tag{12}$$

$$MyMid := (n, a, b) \rightarrow \frac{6}{n} \cdot \frac{1}{2} \cdot \left(f(a) + \sum_{k=1}^{n-1} 2 \cdot f\left(a + k \cdot \frac{(b-a)}{n}\right) + f(b) \right)$$

$$MyMid := (n, a, b) \mapsto \frac{3 \cdot \left(f(a) + \left(\sum_{k=1}^{n-1} 2 \cdot f\left(a + \frac{k \cdot (b-a)}{n}\right) \right) + f(b) \right)}{n} \tag{13}$$

$MyOTHERTrap(5, 1, 7)$

$$MyOTHERTrap(5, 1, 7) \tag{14}$$

$evalf(\%)$

$$23.60094655 \tag{15}$$

I can insert text. Good thing, too, because I think "MyMid" ain't "midpoint method." Such a fool.

$$MyMid := (n, a, b) \rightarrow$$
$$\int_1^7 \mathrm{sqrt}\left(x^2 - \sin(x)\right) \, dx$$

$$\int_1^7 \sqrt{x^2 - \sin(x)} \, dx \tag{16}$$

$evalf(\%)$

$$23.67724118 \tag{17}$$