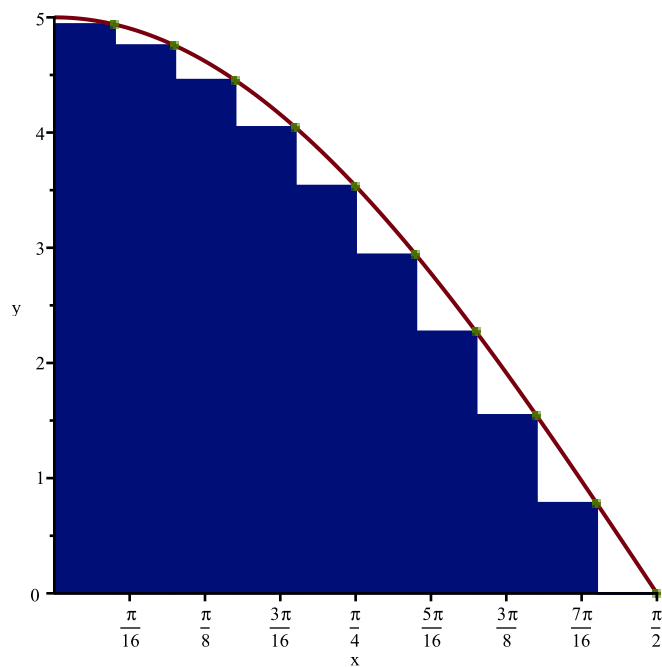


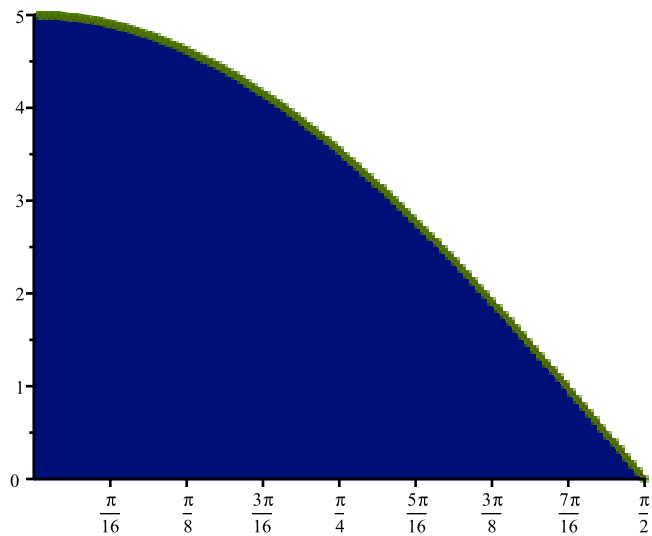


with(Student[CalculusI])

[AntiderivativePlot, AntiderivativeTutor, ApproximateInt, ApproximateIntTutor, ArcLength, ArcLengthTutor, Asymptotes, Clear, CriticalPoints, CurveAnalysisTutor, DerivativePlot, DerivativeTutor, DiffTutor, Distance, ExtremePoints, FunctionAverage, FunctionAverageTutor, FunctionChart, FunctionPlot, GetMessage, GetNumProblems, GetProblem, Hint, InflectionPoints, IntTutor, Integrand, InversePlot, InverseTutor, LimitTutor, MeanValueTheorem, MeanValueTheoremTutor, NewtonQuotient, NewtonsMethod, NewtonsMethodTutor, PointInterpolation, RiemannSum, RollesTheorem, Roots, Rule, Show, ShowIncomplete, ShowSolution, ShowSteps, Summand, SurfaceOfRevolution, SurfaceOfRevolutionTutor, Tangent, TangentSecantTutor, TangentTutor, TaylorApproximation, TaylorApproximationTutor, Understand, Undo, VolumeOfRevolution, VolumeOfRevolutionTutor, WhatProblem]

(1)

ApproximateInt(5*cos(x), 0 .. 1/2*Pi, 'partition' = 100, 'method' = right, 'partitiontype' = normal, 'output' = 'plot', 'boxoptions' = ['filled' = ['transparency' = .5]]);



A right Riemann sum approximation of $\int_0^{\frac{1}{2}\pi} f(x) \, dx$, where $f(x) = 5 \cos(x)$ and the part

5

(2)

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

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

(3)

$$f := x \rightarrow 5 \cdot \cos(x)$$

$$f := x \mapsto 5 \cdot \cos(x)$$

(4)

$$R \left(0, \frac{\text{Pi}}{2}, 10 \right)$$

$$\frac{1}{20} \left(\pi \left(5 \cos \left(\frac{\pi}{20} \right) + 5 \cos \left(\frac{\pi}{10} \right) + 5 \cos \left(\frac{3\pi}{20} \right) + 5 \cos \left(\frac{\pi}{5} \right) + \frac{5\sqrt{2}}{2} + 5 \cos \left(\frac{3\pi}{10} \right) + 5 \cos \left(\frac{7\pi}{20} \right) + 5 \cos \left(\frac{2\pi}{5} \right) + 5 \cos \left(\frac{9\pi}{20} \right) \right) \right)$$

(5)

$$\text{evalf}(\%)$$

$$4.597015850$$

(6)

$$f := x \rightarrow \frac{3}{x}$$

$$f := x \mapsto \frac{3}{x}$$

(7)

$$R(1, 2, 4)$$

$$\frac{533}{280}$$

(8)

$$\text{evalf}(\%)$$

