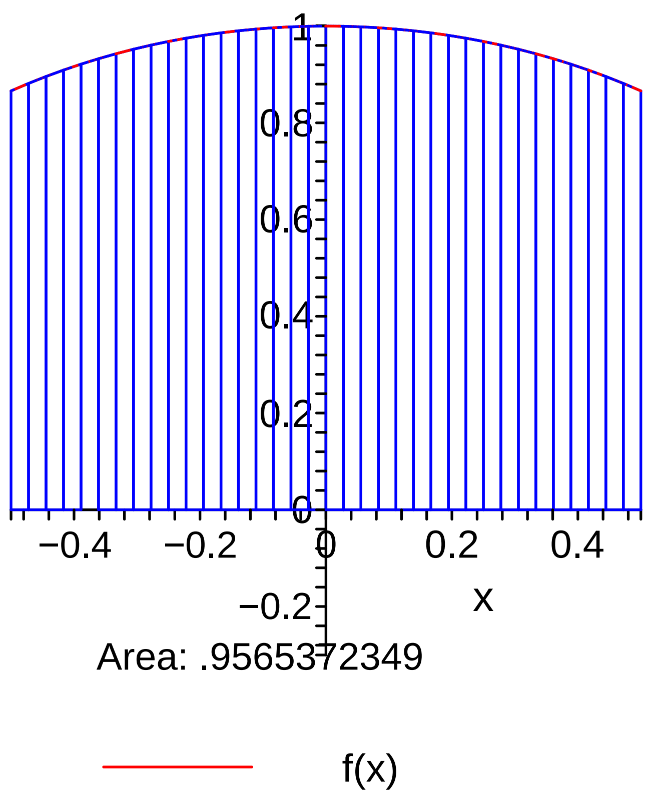
```
> restart;
> with(Student[Calculus1]);
```

[AntiderivativePlot, AntiderivativeTutor, ApproximateInt, ApproximateIntTutor, ArcLength, ArcLengthTutor, Asymptotes, Clear, CriticalPoints, CurveAnalysisTutor, DerivativePlot, DerivativeTutor, DiffTutor, 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, ShowSteps, Summand, SurfaceOfRevolution, SurfaceOfRevolutionTutor, Tangent, TangentSecantTutor, TangentTutor, TaylorApproximation, TaylorApproximationTutor, Understand, Undo, VolumeOfRevolution, VolumeOfRevolutionTutor, WhatProblem]

```
> ApproximateInt(sqrt(1-x^2), x = -1/2 .. 1/2,
    method = trapezoid, partition = 36, output = plot);
```

An Approximation of the Integral of
f(x) = (1−x^2)^(1/2)
on the Interval [−1/2, 1/2]
Using the Trapezoid Rule
Approximate Value: .9566114775




```
> T := ApproximateInt(sqrt(1-x^2), x = -.5 .. .5,
    method = trapezoid, partition = 36);
```

$T := 0.9565372349$

```
> A := int(sqrt(1-x^2), x = -1/2 .. 1/2);
```

$$A := \frac{1}{4}\sqrt{3} + \frac{1}{6}\pi$$

```
> evalf(abs(T-A));
```

$$0.0000742429$$

```
> 10.0^(-4);
```

$$0.0001000000000$$

```
>
```