Math 174
Calculus II

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Lesson 5
Definite Integrals

Initializations

```
> restart;
>
```

5.1 Definite Integrals

Examples

Example 5.1.1

Compute $\int_0^{\pi} \sin x \, dx$.

Solution

The code which evaluates a definite integral is relatively simple. First we use the inert integration command **Int** to show the integral symbolically on the screen. Then we evaluate the integral.

```
> e1:=Int(sin(x), x=0..Pi);
```

$$e1 := \int_0^{\pi} \sin(x)\, dx \qquad (2.1.1.1)$$

```
> e2:=value(e1);
```

$$e2 := 2 \qquad (2.1.1.2)$$

Alternatively one can use the active integration command **int** to immediately evaluate the integral.

```
> e3:=int(sin(x), x=0..Pi);
```

$$e3 := 2 \qquad (2.1.1.3)$$

```
>
```