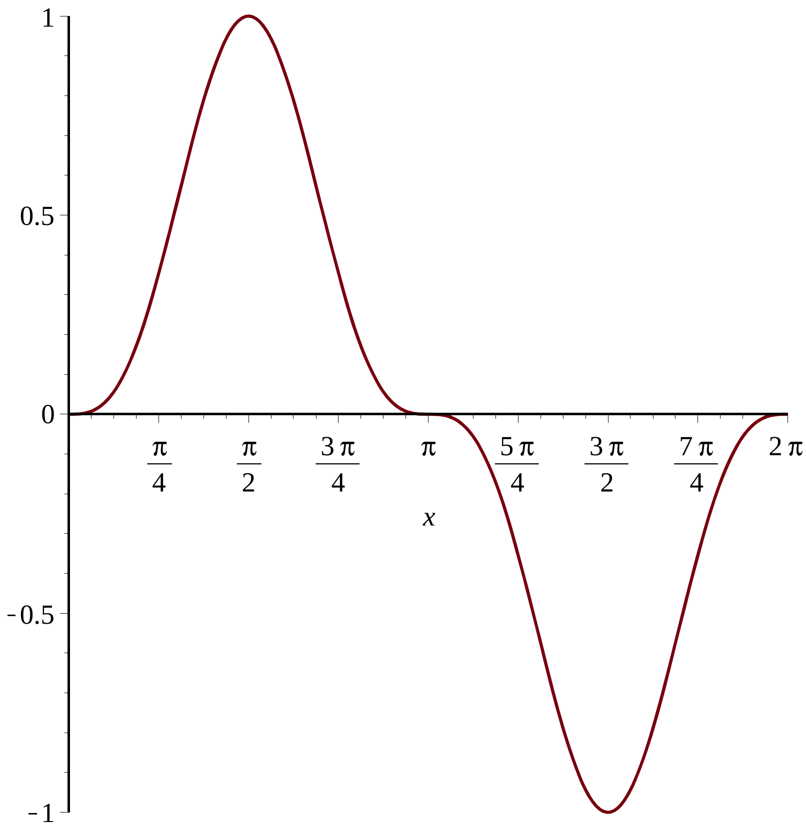
```
> restart;
> f := sin(x)^3;
```

$$f := \sin(x)^3 \tag{1}$$

```
> plot( f, x=0..2*Pi );
```



The area bounded by this function on the interval [0,2*Pi] is

```
> Int( f, x=0..2*Pi );
```

$$\int_0^{2\pi} \sin(x)^3 \, dx \tag{2}$$

```
> (2) = value( (2) );
```

$$\int_0^{2\pi} \sin(x)^3 \, dx = 0 \tag{3}$$

To use Maple to find an antiderivative of this function, I'd try

```
> int( f, x );
```

$$-\frac{1}{3} \sin(x)^2 \cos(x) - \frac{2}{3} \cos(x) \tag{4}$$

This is not likely to be what we would get by hand. As I look at this, I'm expecting to use a trig identity and then a substitution u=cos(x). With this I'd expect to see an answer that involves only cos(x). I can get to this if I tell Maple to replace sin(x)^2 with 1-cos(x)^2:

```
> eval( (4), sin(x)^2=1-cos(x)^2 );
```

$$-\frac{1}{3}\left(1-\cos(x)^2\right)\cos(x)-\frac{2}{3}\cos(x) \qquad \textbf{(5)}$$

```
> expand( (5) );
```

$$-\cos(x)+\frac{1}{3}\cos(x)^3 \qquad \textbf{(6)}$$

That's more like it!

In general it might not be so easy to see how to convert one answer into another form. In such cases I'm likely to plot the two functions and see if they coincide (or, for antiderivatives, if their difference is a constant).

```
> plot( [(4), (6)], x=0..2*Pi, color=[red,blue], linestyle=[dashdot, dot] );
```