```
> squares:=(m)->int((yline(m,x(theta))-y(theta))**2,theta=0..2*Pi);
```

$$squares := m \rightarrow \int_0^{2\pi} (\mathrm{yline}(m, \mathrm{x}(\theta)) - \mathrm{y}(\theta))^2 \, d\theta$$

```
> yline:=(m,x )-> x*m ;
```

$$yline := (m, x) \rightarrow x\, m$$

```
> y:=theta -> 1+cos(theta) ;
```

$$y := \theta \rightarrow 1 + \cos(\theta)$$

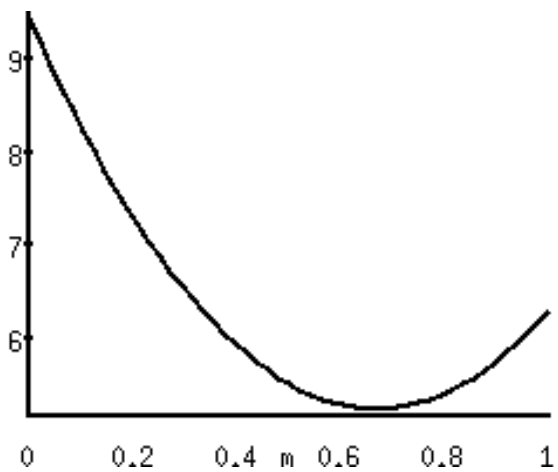
```
> x:= theta -> 1+sin(theta) ;
```

$$x := \theta \rightarrow 1 + \sin(\theta)$$

```
> plot( {x(theta),y(theta)} , theta = 0..Pi ) ;
> evalf(squares(1.0));
```

$$6.283185308$$

```
> plot( squares(m) ,m =0..3 ) ;
> plot( squares(m) ,m =0..1 ) ;
```




```
> eval(squares(m));
```

$$3\,\pi + 3\,m^2\,\pi - 4\,m\,\pi$$

```
> diff(squares(m),m) ;
```

$$6\,m\,\pi - 4\,\pi$$

```
> solve(",m) ;
```

$$\frac{2}{3}$$