

In [1]:

```
r(t)=1-cos(t)
show(r)
```

Out[1]:

$t \mapsto -\cos(t) + 1$

In [2]:

```
var('a,b')
show(integrate((derivative(r(t),t))^2+r(t)^2,t,a,b))
```

Out[2]:

$-2a + 2b + 2 \sin(a) - 2 \sin(b)$

In [3]:

```
show(integrate((derivative(r(t),t))^2+r(t)^2,t,0,2*pi))
```

Out[3]:

4π

In [0]: