

```
> int(1/(1+x^2),x);
```

$\arctan(x)$

```
> int(1/(1+x^2),x=-infinity..infinity);
```

π

```
> int(x^2*sin(x),x);
```

$-x^2 \cos(x) + 2 \cos(x) + 2 x \sin(x)$

```
> diff(arctan(x),x);
```

$\frac{1}{1+x^2}$

```
> eval(1/(1+x^2),x=0);
```

1

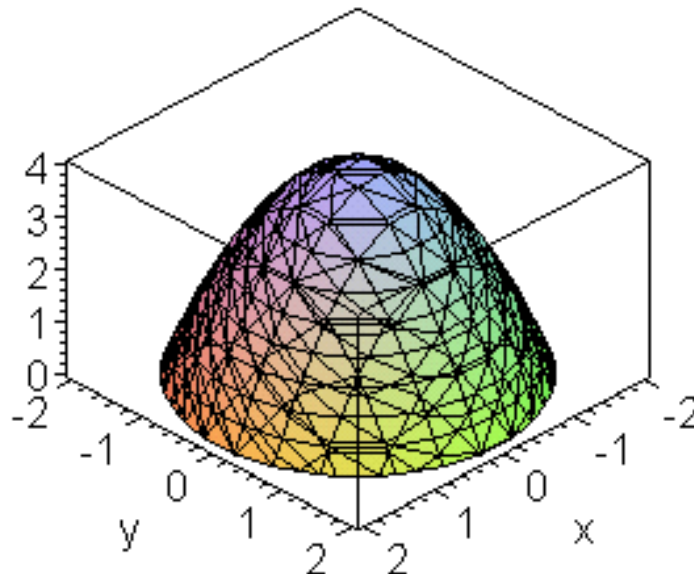
The derivative of the $\arctan(x)$ at $x=0$ has a slope equal to 1.

```
> with(plots):eq1:=z=4-x^2-y^2;
```

$eq1 := z = 4 - x^2 - y^2$

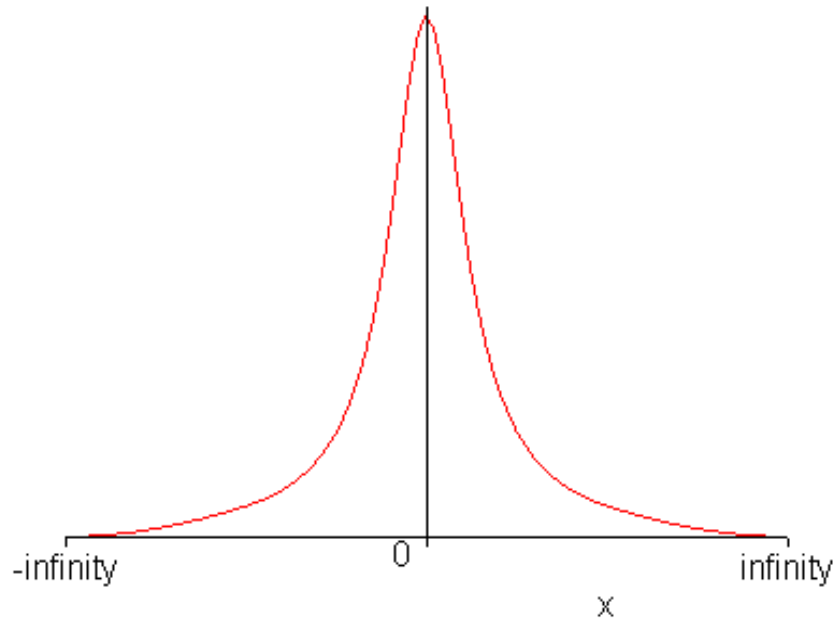
```
> implicitplot3d(eq1,x=-2..2,y=-2..2,z=0..4,axes=boxed,title="Paraboloid");
```

Paraboloid



Implicitplot3d allows us to control the limits for x , y and z .

```
> plot(1/(1+x^2),x=-infinity..infinity);
```



The previous plot represents the 2 dimensional graph of $f(x) = \frac{1}{1+x^2}$ over the domain from minus infinity to plus infinity.