

In [2]:

```
#二階の微分方程式
%display typeset
x = var('x')
omega = var('omega')
y = function('y')(x)
de=diff(y,x,2) + y==0 ;de
```

Out[2]:

$$y(x) + \frac{\partial^2}{(\partial x)^2} y(x) = 0$$

In [3]:

```
#一般解
desolve(de,dvar=y,ivar=x,contrib_ode=True,show_method=True)
```

Out[3]:

$[K_2 \cos(x) + K_1 \sin(x), \text{constcoeff}]$

In [4]:

```
#y(0)=1,dy/dx(0)=0の特殊解
f=desolve(de,dvar=y,ivar=x,ics=[0,1,0]);f
```

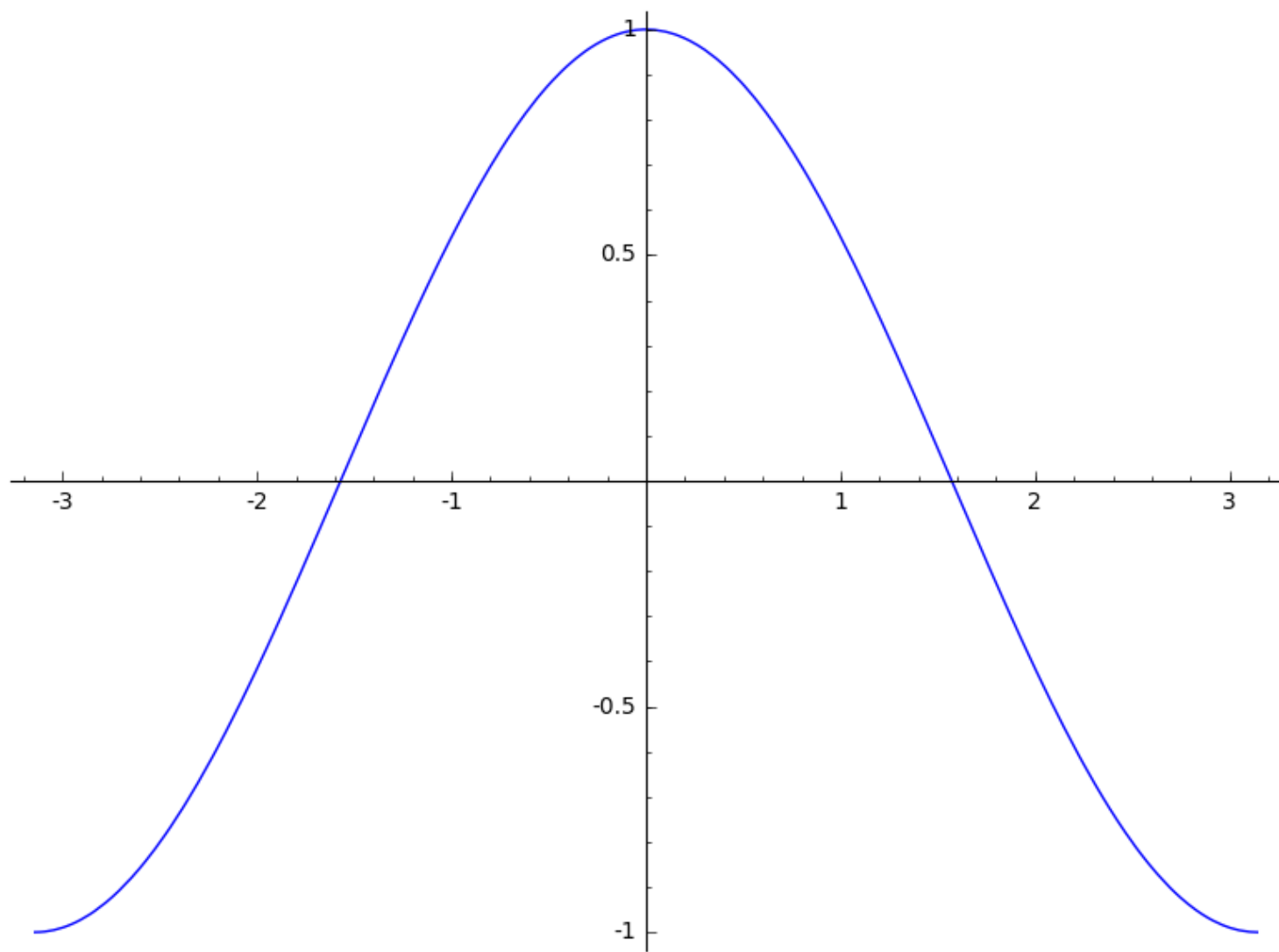
Out[4]:

$\cos(x)$

In [5]:

```
plot(f,[x,-pi,pi])
```

Out[5]:



In []: