Penggunaan Sympy untuk Solusi Proyektil

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References:

1. https://docs.sympy.org/latest/tutorials/intro-tutorial/simplification.html
2. https://docs.sympy.org/latest/modules/plotting.html

```
In [19]: from sympy import *
         init_printing()
```

```
In [20]: x, t = symbols('x y t')
```

```
In [21]: v0, theta = symbols('v0 theta')
         g = symbols('g')
```

```
In [22]: y = (v0*sin(theta)*t -(g/2)*t**2)
         eq = x - v0*cos(theta)*t
```

```
In [23]: hasil = solve([eq1, eq2],[x,t])
         hasil
```

Out[23]: $$\left[\left(0, \ 0\right), \ \left(\frac{2 v_0^2 \sin{\left(\theta \right)} \cos{\left(\theta \right)}}{g}, \ \frac{2 v_0 \sin{\left(\theta \right)}}{g}\right)\right]$$
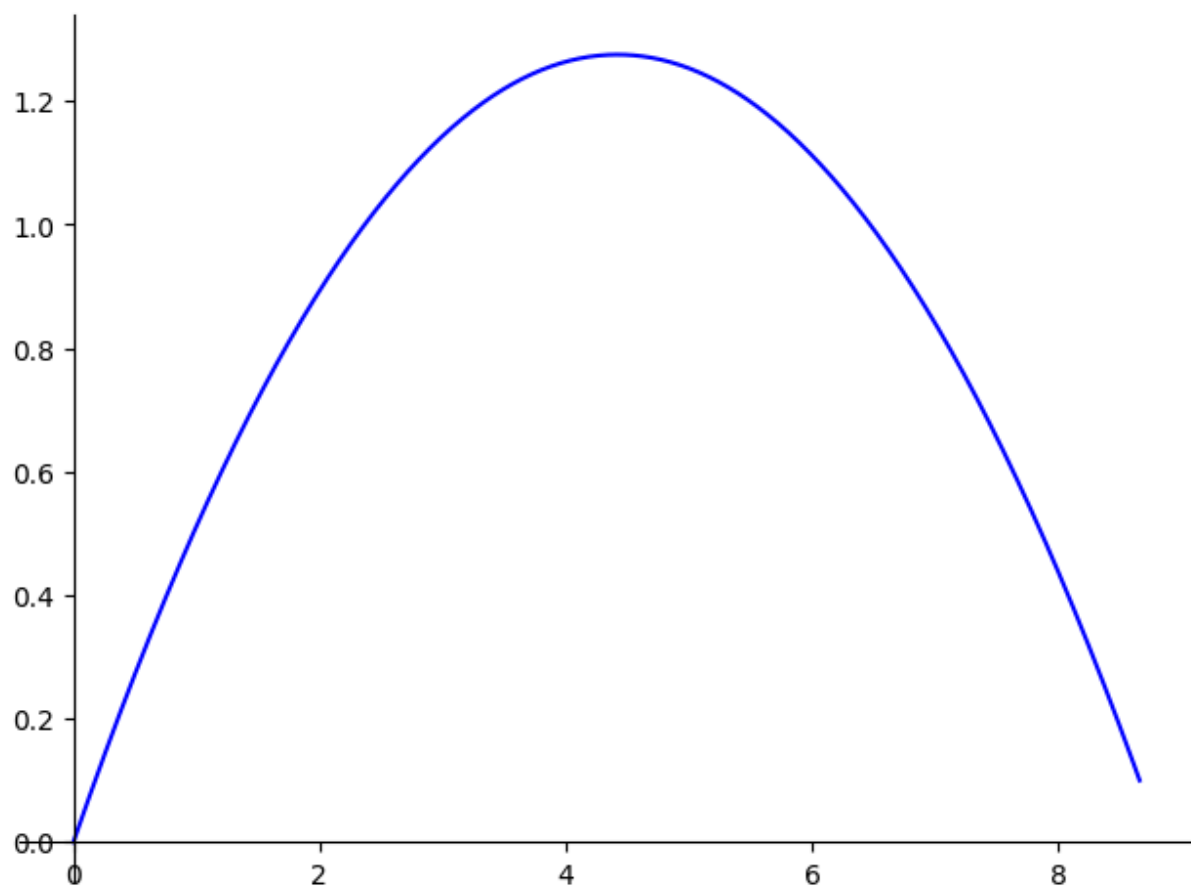
```
In [24]: R = hasil[1][0]
         T = hasil[1][1]
```

```
In [25]: R, trigsimp(R)
```

Out[25]: $$\left(\frac{2 v_0^2 \sin{\left(\theta \right)} \cos{\left(\theta \right)}}{g}, \ \frac{v_0^2 \sin{\left(2\theta \right)}}{g}\right)$$

```
In [34]: v0 = 10
         theta = 30*pi/180
         g = 9.8
         p = plot_parametric((v0*cos(theta)*t),(v0*sin(theta)*t -(g/2)*t**2), (t, 0, 1), line_
```