$x := t \to v \cdot \cos(\text{theta}) \cdot t;$

$$t \to v \cos(\theta)\, t \tag{1}$$

$y := t \to -16 \cdot t^2 + v \cdot \sin(\text{theta}) \cdot t + 5;$

$$t \to -16\, t^2 + v \sin(\theta)\, t + 5 \tag{2}$$

$with(plots);$

$$[animate, animate3d, animatecurve, arrow, changecoords, complexplot, complexplot3d, conformal, conformal3d, contourplot, contourplot3d, coordplot, coordplot3d, densityplot, display, dualaxisplot, fieldplot, fieldplot3d, gradplot, gradplot3d, implicitplot, implicitplot3d, inequal, interactive, interactiveparams, intersectplot, listcontplot, listcontplot3d, listdensityplot, listplot, listplot3d, loglogplot, logplot, matrixplot, multiple, odeplot, pareto, plotcompare, pointplot, pointplot3d, polarplot, polygonplot, polygonplot3d, polyhedra_supported, polyhedraplot, rootlocus, semilogplot, setcolors, setoptions, setoptions3d, shadebetween, spacecurve, sparsematrixplot, surfdata, textplot, textplot3d, tubeplot] \tag{3}$$

$\text{subs}\left(\text{theta} = \frac{\pi}{4}, v = 100, x(t)\right);$

$\text{subs}\left(\text{theta} = \frac{\pi}{4}, v = 100, y(t)\right);$

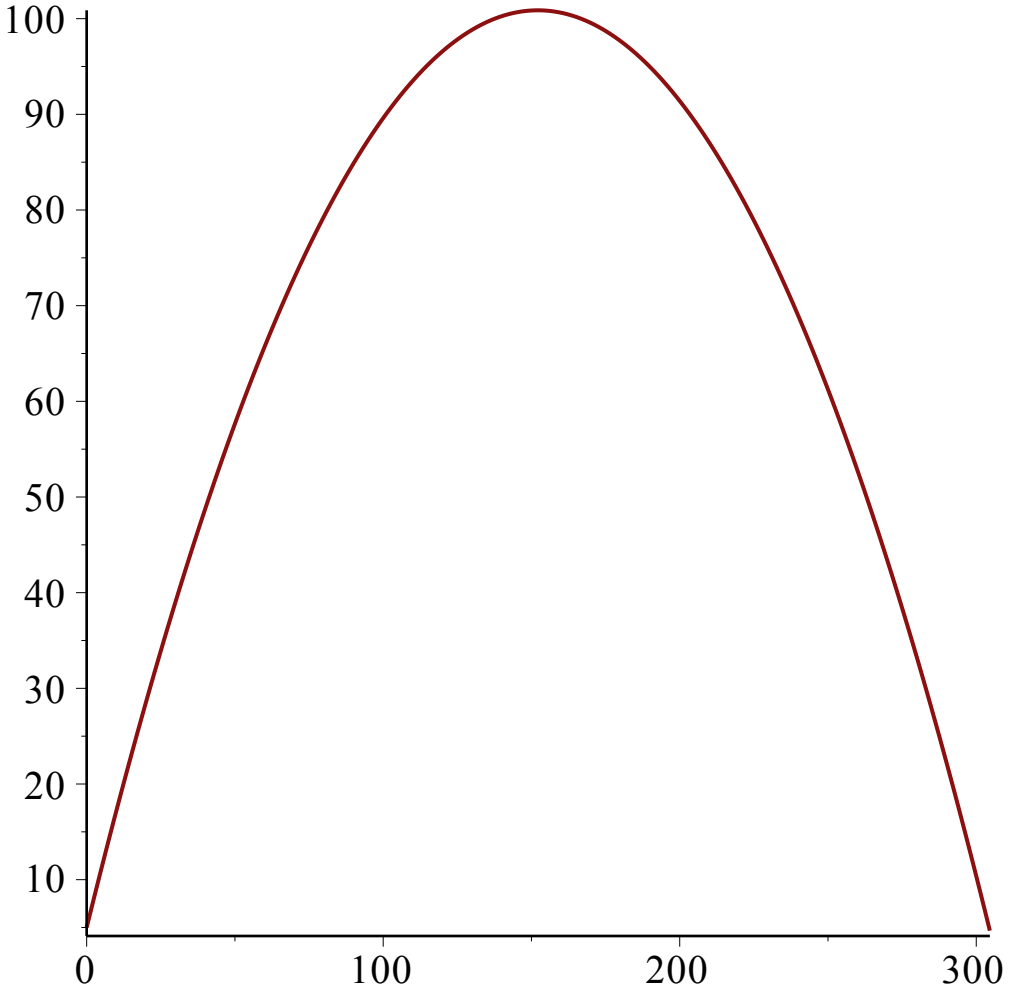
$$100 \cos\left(\frac{1}{4}\pi\right) t$$

$$-16\, t^2 + 100 \sin\left(\frac{1}{4}\pi\right) t + 5 \tag{4}$$

$evalf\left(\frac{\text{Pi}}{4}\right);$

$$0.7853981635 \tag{5}$$

$plot([\text{subs}(\text{theta} = 0.9, v = 100, x(t)), \text{subs}(\text{theta} = 0.9, v = 100, y(t)), t = 0..4.9]);$



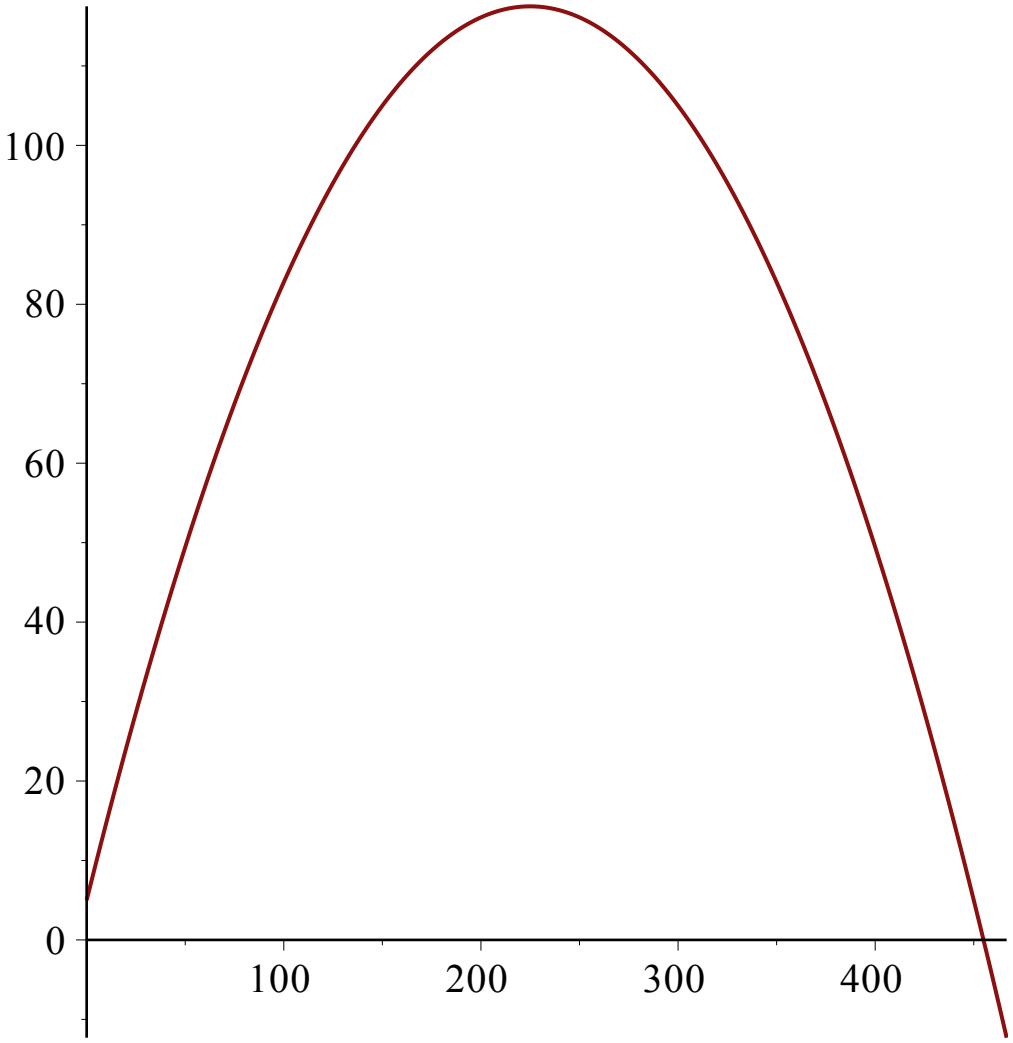
$$\left(100\cdot\sin(0.9)+\operatorname{sqrt}\left(100^2\cdot(\sin(0.9))^2+320\right)\right)\cdot\frac{1}{32};$$

4.958812307617672381173401743768305201192058474569356527633842222015149228231\
0930945118801871797320 74 **(6)**

$Digits := 100$:
$evalf(\%\%)$;

4.958812307617672381173401743768305201192058474569356527633842222015149228231\
0930945118801871797320 74 **(7)**

$$plot\left(\left[\operatorname{subs}\left(\text{theta}=\frac{\text{Pi}}{4}, v=120, x(t)\right), \operatorname{subs}\left(\text{theta}=\frac{\text{Pi}}{4}, v=120, y(t)\right), t=0..5.5\right]\right);$$



$$tground := \frac{\left(v \cdot \sin(\text{theta}) + \text{sqrt}\left(v^2 \cdot (\sin(\text{theta}))^2 + 320\right)\right)}{32};$$

$$\frac{1}{32} v \sin(\theta) + \frac{1}{32} \sqrt{v^2 \sin(\theta)^2 + 320} \quad \textbf{(8)}$$

$$evalf\left(subs\left(v = 120, \text{theta} = \frac{\text{Pi}}{4}, tground\right)\right);$$

5.36158585303440314387686941798469631710171695223433016879517033042688561484817481412803941120505412 **(9)**

$$subs\left(v = 120, \text{theta} = \frac{\text{Pi}}{4}, x(\%)\right);$$

643.39030236412837726522433015816355805220603426811962025542043965122627378178097769536472934460649547 cos$\left(\frac{1}{4}\pi\right)$ **(10)**

$$evalf(\%);$$

454.94564575133837484830522987358073066039909889334704378497191106271923971999775457823036555835173467 **(11)**

$$plot\left(\frac{2073600}{\cos(\text{theta}) \cdot (360 \cdot \sin(\text{theta}) - 7 \cdot \cos(\text{theta}))}, \text{theta} = \frac{\text{Pi}}{6} .. \frac{\text{Pi}}{3} \right);$$