PHYS2502 Mathematical Physics Lab #1 10 Jan 2022

This lab assignment is at 8am, the morning after the date shown, although you should able to complete it easily before the end of the lab period. Email your executed MATHEMATICA *notebook to the instructor.*

Even if you have not yet installed MATHEMATICA on your computer, you ought to be able to install it and still complete this lab before the end of the period. See the course website for instructions on installing MATHEMATICA.

A projectile is fired with initial speed v_0 and at an angle θ with respect to the horizontal. Neglecting air resistance, its range is given by

$$R = \frac{2v_0^2}{g} \cos\theta \sin\theta$$

where g is the acceleration due to gravity near the Earth's surface. Make a plot of the range as a function of angle for $v_0 = 30$ m/sec.