1.
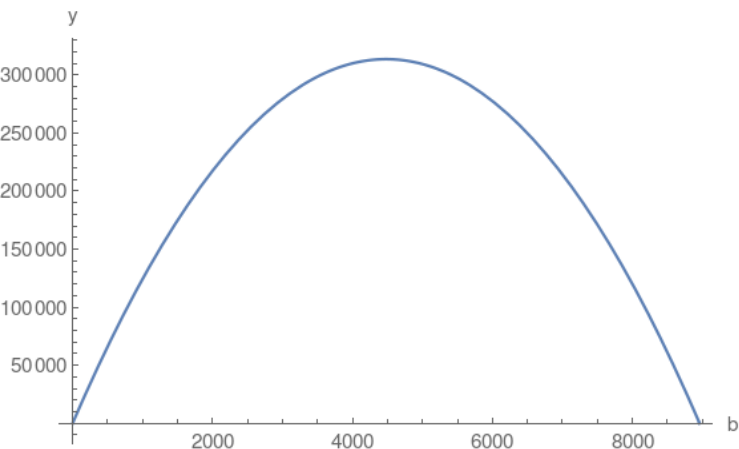
1. (1) To solve for the MIN/MAX, first calculate the vertex:

$$\text{vertex} = \frac{-140}{2\frac{(-16)}{32^2}} = 4480$$

since the height y of the projectile is modeled by a Parabola formula.