4.
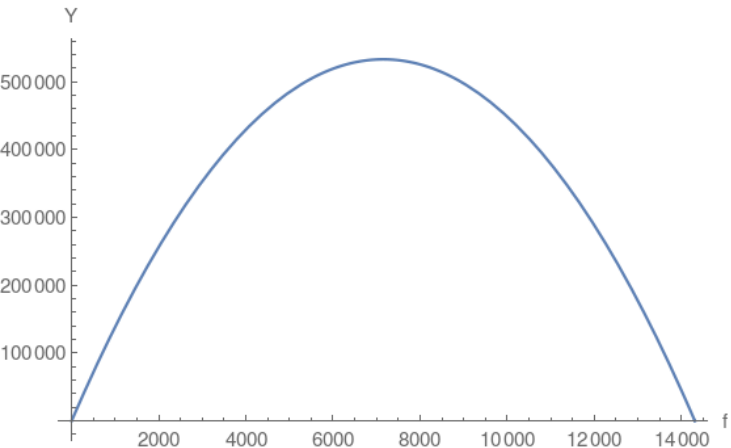
4. (1) To solve for the MIN/MAX, first calculate the vertex:

$$\text{vertex} = \frac{-149}{2\frac{(-23)}{47^2}} = \frac{329141}{46}$$

since the height Y of the projectile is governed by a Parabola formula.