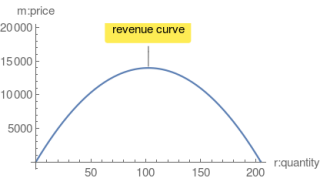


1.

1. (1) Basis for the Revenue model is a simple multiplication:

$$\text{Revenue} = \text{Price} \times \text{Quantity} = \left(-\frac{4}{3}r + 273\right) \times r = 273r - \frac{4r^2}{3}$$

Notice the latter is a quadratic:



(2) Domain starts at 0 USDollars revenue up to r-intercept coordinate equal to twice the value of vertex of the Parabola:

$$\frac{819}{4}$$

(4) The maximum occurs at the vertex r-intercept coordinate:

$$\frac{819}{8}$$

or the amount 13974.2 USDollars .