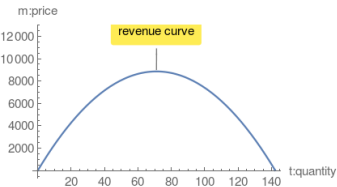


1.

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

$$\text{Revenue} = \text{Price} \times \text{Quantity} = \left(-\frac{7}{4}t + 249\right) \times t = 249t - \frac{7t^2}{4}$$

Notice the latter is a quadratic:



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

$$\frac{996}{7}$$

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

$$\frac{498}{7}$$

or the amount 8857.28 Yen .