**4.**
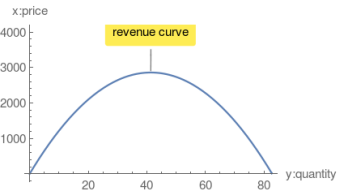
4. (1) Basis for the Revenue model is a simple multiplication:

Revenue = Price×Quantity = $\left(-\frac{5}{3}y+138\right) \times y$ = $138y - \frac{5y^2}{3}$

Notice the latter is a quadratic:



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

$\frac{414}{5}$

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

$\frac{207}{5}$

or the amount 2856.6 Yen .