1.

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

Revenue = Price×Quantity = $(-\frac{1}{7}g+311) \times g = 311\,g - \frac{g^2}{7}$

Notice the latter is a quadratic:
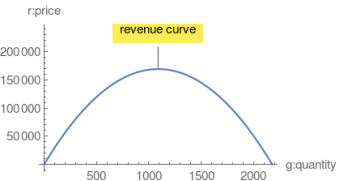
(2) Domain starts at 0 Yen revenue up to g-intercept coordinate equal to twice the value of vertex of the Parabola: 2177

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

$\frac{2177}{2}$

or the amount 169 262. Yen .