1.

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

Revenue = Price×Quantity = $(-\frac{10}{3}n+169) \times n = 169\,n - \frac{10\,n^2}{3}$

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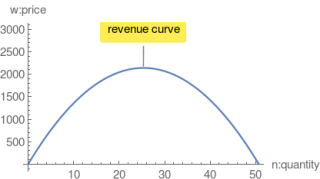
(2) Domain starts at 0 USDollars revenue up to n-intercept coordinate equal to twice the value of vertex of the Parabola:

$\frac{507}{10}$

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

$\frac{507}{20}$

or the amount 2142.07 USDollars .