1.

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

Revenue = Price×Quantity = $(-\frac{9}{2}a+168) \times a = 168\,a - \frac{9\,a^2}{2}$

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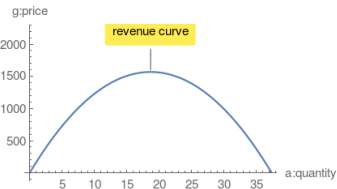
(B) Domain starts at 0 Yen revenue up to a-intercept coordinate equal to twice the value of vertex of the Parabola:

$\frac{112}{3}$

(D) The maximum occurs at the vertex a-intercept coordinate:

$\frac{56}{3}$

or the amount 1568. Yen .