1.

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

Revenue = Price×Quantity = $(-\frac{1}{2}r+168) \times r$ = $168\,r - \frac{r^2}{2}$

Notice the latter is a quadratic:
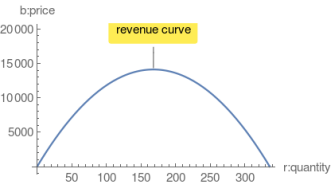
(2) Domain starts at 0 Euros revenue up to r-intercept coordinate equal to twice the value of vertex of the Parabola:
336
(4) The maximum occurs at the vertex r-intercept coordinate:
168
or the amount 14112. Euros .