

Question 3

Revenue is $R(p, a) = 1200p - 30p^2 + 50a - 2a^2 + 4pa$, where p is dollars and a is hundreds of advertising dollars.

Tasks

1. Compute $R_p(10, 5), R_a(10, 5)$.
2. State units.
3. Interpret both values.

Question 3 – Solution

Strategy. Attach output units per input unit.

Step 1: Compute $R_p = 1200 - 60p + 4a$ and $R_a = 50 - 4a + 4p$, so $\boxed{R_p(10, 5) = 620}$ and $\boxed{R_a(10, 5) = 70}$.

Step 2: Units These are revenue dollars per price dollar and revenue dollars per hundred advertising dollars.

Step 3: Meaning Locally, a \$1 price rise predicts \$620 more revenue; an added \$100 advertising predicts \$70 more, with the other input fixed.