

Question 10

At the same input, models satisfy $A_x = 5$, $A_y = -2$ and $B_x = -1$, $B_y = -2$.

Tasks

1. Compare positive- x responses.
2. Compare positive- y responses.
3. State what cannot be concluded from these data.

Question 10 – Solution

Strategy. Partial derivatives give local coordinate-specific rates.

Step 1: x A locally rises at 5 per unit; B falls at 1 per unit. Their signs oppose and A has greater absolute sensitivity.

Step 2: y Both locally fall at 2 per positive y unit.

Step 3: Limits We cannot infer $A > B$, global monotonicity, or exact finite changes without more information.

The data justify local rate comparisons only.