

Question 5

At a terrain point, $f_x = -0.25$ and $f_y = 0.60$, with all distances in meters.

Tasks

1. Interpret both as rise/run.
2. Find signed trace angles.
3. Identify the steeper trace.

Question 5 – Solution

Strategy. A trace slope is the tangent of its signed inclination.

Step 1: Rise/run A one-meter positive x move predicts -0.25 m elevation change; a positive y move predicts 0.60 m, separately.

Step 2: Angles $\alpha_x = \arctan(-.25) \approx -14.0^\circ$ and $\alpha_y = \arctan(.60) \approx 31.0^\circ$.

Step 3: Compare Since $.60 > .25$, the y trace is steeper; its positive sign indicates ascent.