Printable Algebra Coordinate Grids: Labeled Axes, Quadrants, and Slope Reference

Original tasks 1, 2, 3, 4 / complete keys

Task 1

A grid has axes from -6 to 6 with labels every two cells. Plot P(-3, 2) and Q(1, 6). Find the rise, run, and slope.

Answer: Rise = 6 - 2 = 4. Run = 1 - (-3) = 4. Slope = 4/4 = 1.

Reason: Subtract the y-values for rise and the x-values for run, then divide rise by run.

Check: Count squares from P to Q: up 4 cells and right 4 cells, which matches slope 1.

Task 2

On the same grid, plot R(-2, -1) and S(2, -5). Find the rise, run, and slope.

Answer: Rise = -5 - (-1) = -4. Run = 2 - (-2) = 4. Slope = -4/4 = -1.

Reason: A negative rise with a positive run gives a negative slope.

Check: Count squares from R to S: down 4 cells and right 4 cells, which matches slope -1.

Task 3

A grid shows quadrant numerals I, II, III, and IV. State which quadrant contains each point: (3, 4), (-2, 5), (-1, -3), (4, -2).

Answer: (3, 4) is in I; (-2, 5) is in II; (-1, -3) is in III; (4, -2) is in IV.

Reason: Quadrant I has positive x and y; II has negative x and positive y; III has negative x and y; IV has positive x and negative y.

Check: Check the sign of each coordinate pair against the quadrant definitions.

Task 4

A slope reference box states slope equals rise divided by run and gives the example from (1, 2) to (4, 6). Verify the example and state the slope.

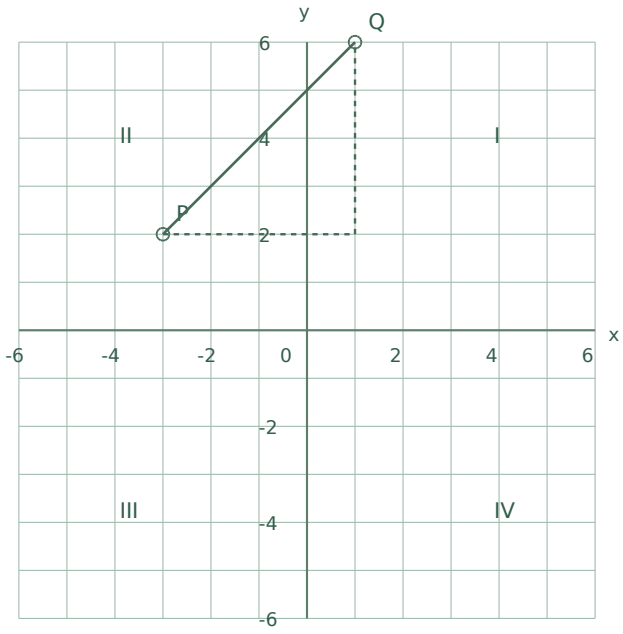
Answer: Rise = 6 - 2 = 4. Run = 4 - 1 = 3. Slope = 4/3. The example is correct.

Reason: Apply the stated formula to the two coordinate pairs in the example.

Check: Recalculate rise and run independently and confirm the division gives 4/3.

Task 1 / diagram

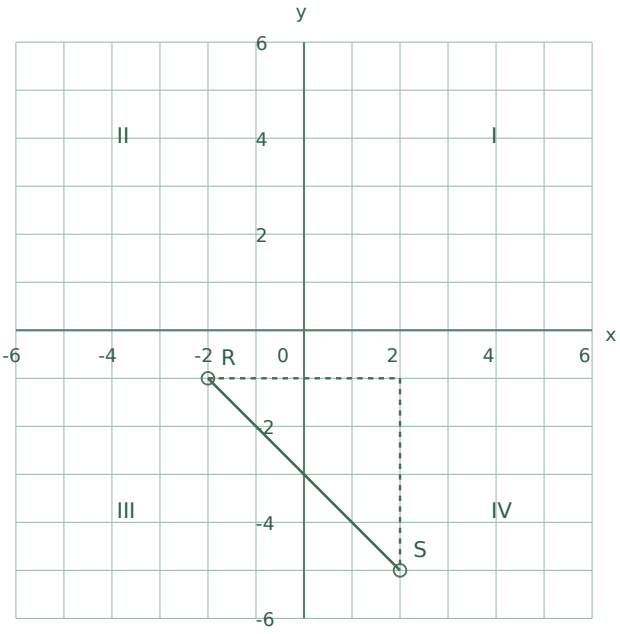
Original -6 to 6 window / quarter-inch cells



Run = 4; rise = 4. Compute slope as rise / run. The right-angle counting route is a separate helper, not a second function.

Task 2 / diagram

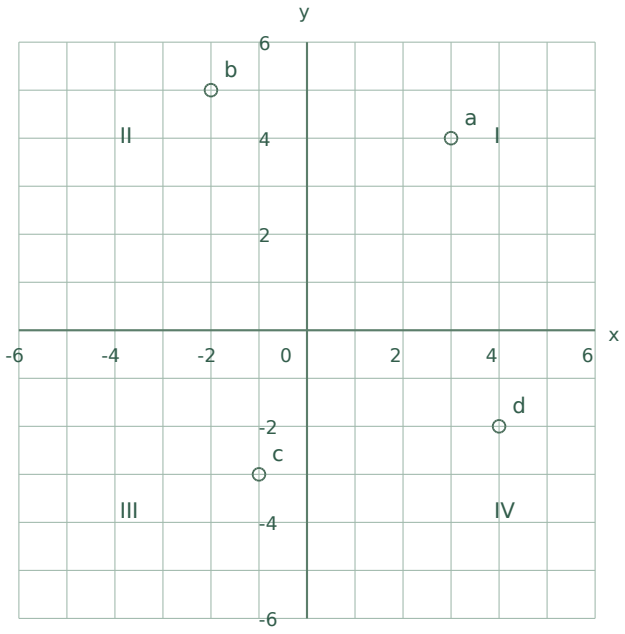
Original -6 to 6 window / quarter-inch cells



Run = 4; rise = -4. Compute slope as rise / run. The right-angle counting route is a separate helper, not a second function.

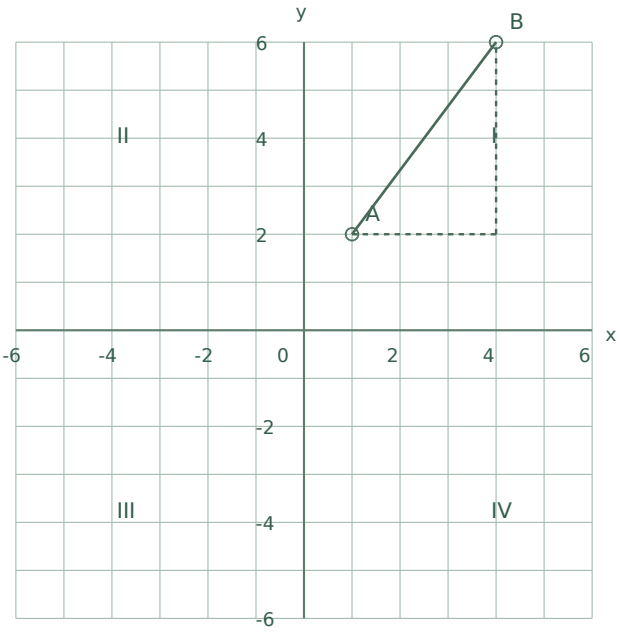
Task 3 / diagram

Original -6 to 6 window / quarter-inch cells



Task 4 / diagram

Original -6 to 6 window / quarter-inch cells



Run = 3; rise = 4. Compute slope as rise / run. The right-angle counting route is a separate helper, not a second function.

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Source rubric / reflection

- [ ] Axes are labeled x and y and cross at a marked origin.
- [ ] Axis numbers use equal intervals on both axes and include negative and positive values.
- [ ] Quadrant numerals I, II, III, and IV are placed in the correct regions without overlap.
- [ ] The slope reference box states rise divided by run and includes one correct numerical example.
- [ ] No pre-drawn line or full equation appears in the slope box.
- [ ] Labels are legible under the stated x-height convention, and valid alternative letter styles are accepted.
- [ ] Printed cell size is measured on the actual equipment, and any chosen numerical values are labeled as hypothetical examples.

Reflection: What did you check, what did you change, and what will you try next?