Draw Slope Triangles: Rise Over Run Worksheet

Complete worked example / separate answer key

A line passes through A(2, 1) and B(5, 7). Draw a slope triangle using the convention, label rise and run, and compute the simplified slope.

Answer: Rise = 7 - 1 = 6; run = 5 - 2 = 3; slope = 6/3 = 2. The triangle has a vertical leg of 6 units upward from A and a horizontal leg of 3 units rightward to B, with the right angle at the corner (5, 1).

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Original tasks 1, 2, 3 / complete keys

Task 1

A line passes through A(1, 2) and B(4, 8). Draw the slope triangle, label rise and run, and compute the simplified slope.

Answer: Rise = 6, run = 3, slope = 2.

Reason: Subtract y-values: 8 - 2 = 6. Subtract x-values: 4 - 1 = 3. Slope = 6/3 = 2. The vertical leg goes up 6 from A; the horizontal leg goes right 3 to B.

Check: Draw a second triangle from A(1, 2) to (7, 14): rise = 12, run = 6, slope = 12/6 = 2. The simplified slopes match.

Task 2

A line passes through A(0, 5) and B(4, 1). Draw the slope triangle, label rise and run, and compute the simplified slope.

Answer: Rise = -4, run = 4, slope = -1.

Reason: Subtract y-values: 1 - 5 = -4. Subtract x-values: 4 - 0 = 4. Slope = -4/4 = -1. The line falls from left to right, so the slope is negative.

Check: Use points (0, 5) and (2, 3): rise = -2, run = 2, slope = -2/2 = -1. The simplified slopes match.

Task 3

A line passes through A(2, 3) and B(6, 6). Draw the slope triangle, label rise and run, and compute the simplified slope.

Answer: Rise = 3, run = 4, slope = 3/4.

Reason: Subtract y-values: 6 - 3 = 3. Subtract x-values: 6 - 2 = 4. Slope = 3/4, already simplified because 3 and 4 share no common factor other than 1.

Check: Use points (2, 3) and (10, 9): rise = 6, run = 8, slope = 6/8 = 3/4. The simplified slopes match.

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Original tasks 4 / complete keys

Task 4

A line passes through A(1, 4) and B(5, 2). Draw the slope triangle, label rise and run, and compute the simplified slope.

Answer: Rise = -2, run = 4, slope = -1/2.

Reason: Subtract y-values: 2 - 4 = -2. Subtract x-values: 5 - 1 = 4. Slope = -2/4 = -1/2 after dividing numerator and denominator by 2. The line falls left to right.

Check: Use points (1, 4) and (9, 0): rise = -4, run = 8, slope = -4/8 = -1/2. The simplified slopes match.

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Task 1, Task 2, Task 3, Task 4 / Separate Answer Key

Answer key with correct triangles, labeled rise/run, simplified slopes, and check notes.

Task 1: Rise = 6, run = 3, slope = 2. Check: from A(1,2) to (7,14), rise = 12, run = 6, slope = 12/6 = 2.

Task 2: Rise = -4, run = 4, slope = -1. Check: from (0,5) to (2,3), rise = -2, run = 2, slope = -2/2 = -1.

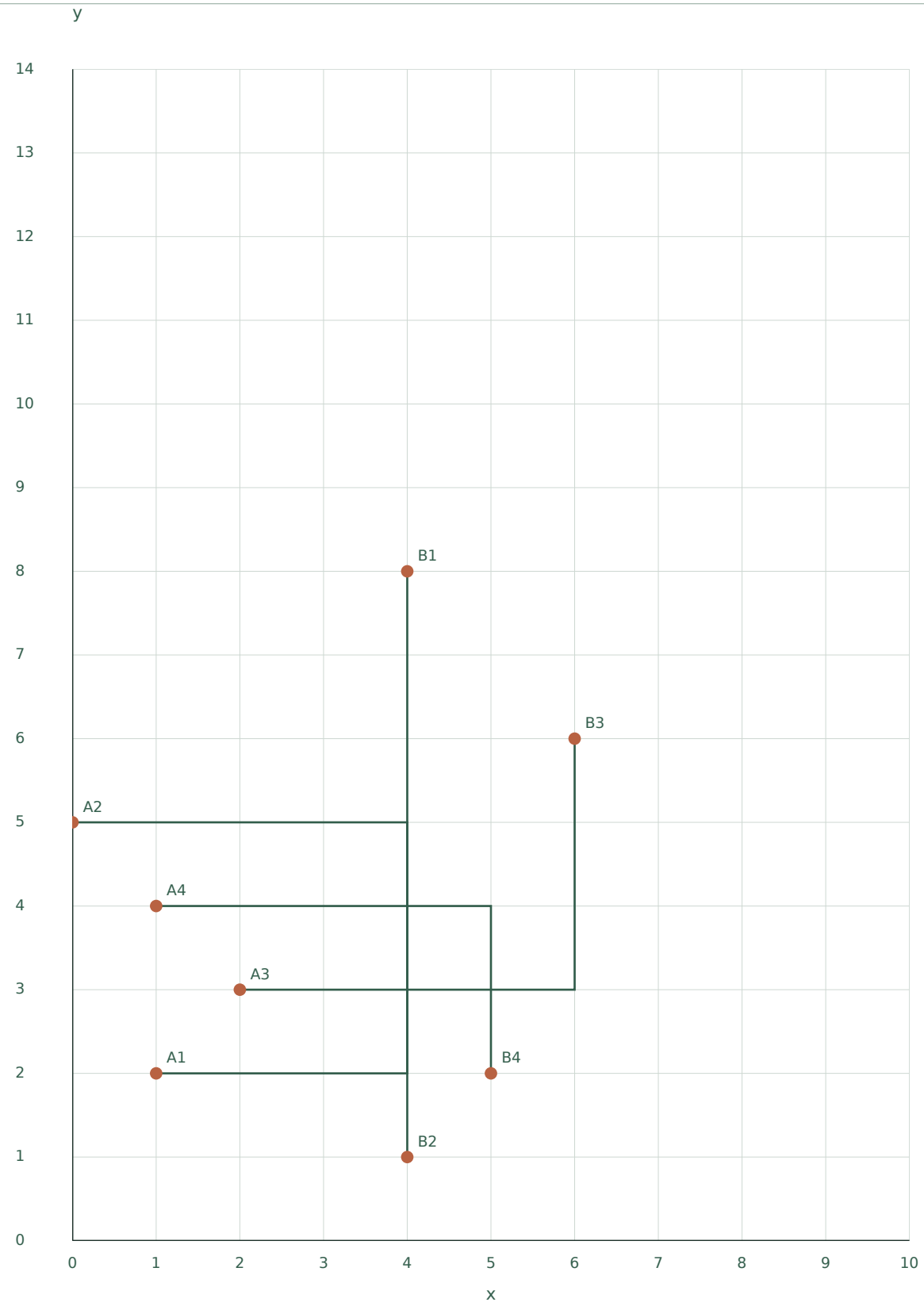
Task 3: Rise = 3, run = 4, slope = 3/4. Check: from (2,3) to (10,9), rise = 6, run = 8, slope = 6/8 = 3/4.

Task 4: Rise = -2, run = 4, slope = -1/2. Check: from (1,4) to (9,0), rise = -4, run = 8, slope = -4/8 = -1/2.

Rubric: (1) points identified and labeled; (2) convention followed: vertical leg first, horizontal leg second, right angle marked; (3) rise and run labeled on correct legs with correct counts; (4) slope written as rise/run and simplified; (5) sign matches line direction; (6) labels legible; alternative handwriting and label placement accepted.

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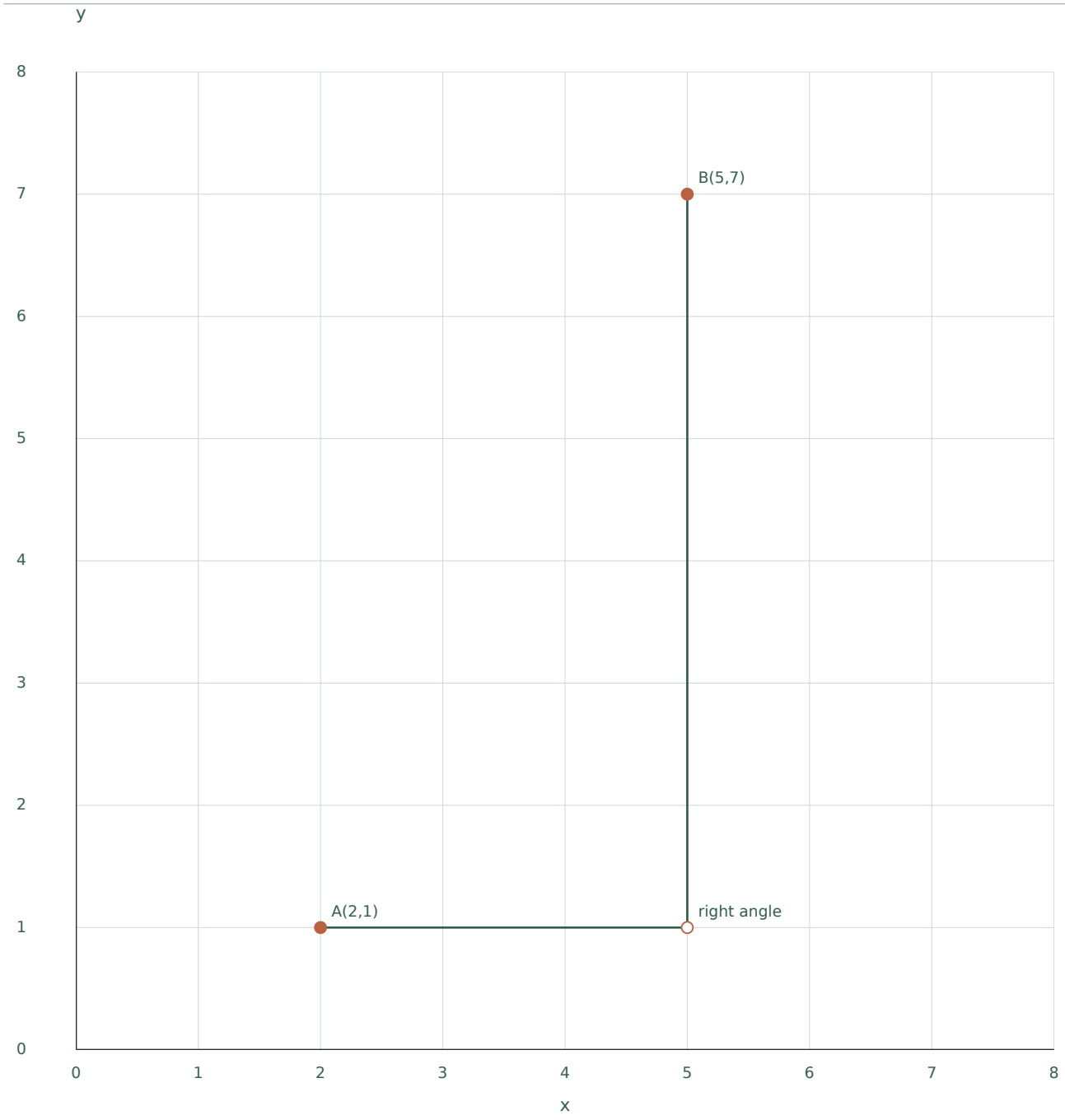
Task 1, Task 2, Task 3, Task 4 / Answer Key Diagrams



All four triangles drawn with vertical leg first, horizontal leg second, right angle marked.

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Worked example / Worked Example: Slope Triangle for A(2, 1) and B(5, 7)



Slope = 6/3 = 2.

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Source rubric / reflection

- [ ] Two points on the line are correctly identified and labeled with coordinates.
- [ ] The right triangle follows the convention: vertical leg from the left point, horizontal leg to the right point, right angle marked.
- [ ] Rise and run are labeled on the correct legs with correct integer counts.
- [ ] Slope is written as rise divided by run and simplified correctly.
- [ ] Sign of the slope matches the line direction.
- [ ] Labels are legible; alternative handwriting styles and label placements are accepted if the meaning is clear.

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