Name: _____ Date: _____

Similar Triangles and Slope – Medium

The three points lie on one line. Find the slope using the first and second points, then the second and third. Explain why the slopes are equal.

1. (1, 3), (4, 7), (7, 11)
2. (-3, 4), (3, 12), (6, 16)
3. (0, 3), (9, 6), (15, 8)
4. (-2, -1), (1, 5), (2, 7)
5. (-1, 4), (0, 10), (2, 22)
6. (-3, 1), (-2, 3), (0, 7)

The two slope triangles lie on the same line, so they are similar. Find the missing side.

7. A slope triangle on a line rises 6 units over a run of 4. A similar slope triangle on the same line has a rise of 9. Find its run.
8. A slope triangle on a line rises 3 units over a run of 4. A similar slope triangle on the same line has a run of 16. Find its rise.
9. A slope triangle on a line rises 6 units over a run of 10. A similar slope triangle on the same line has a run of 25. Find its rise.
10. A slope triangle on a line rises 6 units over a run of 5. A similar slope triangle on the same line has a rise of 30. Find its run.

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Similar Triangles and Slope – Medium

The two slope triangles lie on the same line, so they are similar. Find the missing side.

11. A slope triangle on a line rises 3 units over a run of 4. A similar slope triangle on the same line has a rise of 15. Find its run.

12. A slope triangle on a line rises 6 units over a run of 2. A similar slope triangle on the same line has a run of 5. Find its rise.

Do the three points lie on the same line? Compare the slopes of the two slope triangles.

13. (3, 2), (9, 5), (15, 9)

14. (1, 3), (5, 6), (9, 9)

15. (-2, 1), (10, 4), (14, 6)

16. (1, 1), (5, 7), (11, 16)

17. (-3, 2), (-1, 7), (5, 22)

18. (3, 0), (6, 4), (15, 16)

19. (-2, 1), (13, 7), (23, 11)

20. (-4, 1), (4, 7), (12, 12)

Similar Triangles and Slope – Medium – Answer Key

1. (1, 3), (4, 7), (7, 11)

   4/3 = 4/3 and 4/3 = 4/3; the slope triangles are similar, so their sides are proportional

2. (-3, 4), (3, 12), (6, 16)

   8/6 = 4/3 and 4/3 = 4/3; the slope triangles are similar, so their sides are proportional

3. (0, 3), (9, 6), (15, 8)

   3/9 = 1/3 and 2/6 = 1/3; the slope triangles are similar, so their sides are proportional

4. (-2, -1), (1, 5), (2, 7)

   6/3 = 2 and 2/1 = 2; the slope triangles are similar, so their sides are proportional

5. (-1, 4), (0, 10), (2, 22)

   6/1 = 6 and 12/2 = 6; the slope triangles are similar, so their sides are proportional

6. (-3, 1), (-2, 3), (0, 7)

   2/1 = 2 and 4/2 = 2; the slope triangles are similar, so their sides are proportional

7. A slope triangle on a line rises 6 units over a run of 4. A similar slope triangle on the same line has a rise of 9. Find its run.

   6 (slope 3/2)

8. A slope triangle on a line rises 3 units over a run of 4. A similar slope triangle on the same line has a run of 16. Find its rise.

   12 (slope 3/4)

9. A slope triangle on a line rises 6 units over a run of 10. A similar slope triangle on the same line has a run of 25. Find its rise.

   15 (slope 3/5)

10. A slope triangle on a line rises 6 units over a run of 5. A similar slope triangle on the same line has a rise of 30. Find its run.

    25 (slope 6/5)

Similar Triangles and Slope – Medium – Answer Key

11. A slope triangle on a line rises 3 units over a run of 4. A similar slope triangle on the same line has a rise of 15. Find its run.

    20 (slope 3/4)

12. A slope triangle on a line rises 6 units over a run of 2. A similar slope triangle on the same line has a run of 5. Find its rise.

    15 (slope 3)

13. (3, 2), (9, 5), (15, 9)

    No: 1/2 ≠ 2/3

14. (1, 3), (5, 6), (9, 9)

    Yes: both slopes are 3/4

15. (-2, 1), (10, 4), (14, 6)

    No: 1/4 ≠ 1/2

16. (1, 1), (5, 7), (11, 16)

    Yes: both slopes are 3/2

17. (-3, 2), (-1, 7), (5, 22)

    Yes: both slopes are 5/2

18. (3, 0), (6, 4), (15, 16)

    Yes: both slopes are 4/3

19. (-2, 1), (13, 7), (23, 11)

    Yes: both slopes are 2/5

20. (-4, 1), (4, 7), (12, 12)

    No: 3/4 ≠ 5/8