

Triangles

Two triangles are similar.

The first triangle has sides of 6, 8 and X .

The second triangle has sides of 18, 12, and Y .

- 1) What could X and Y be?
Please try to find all of the possibilities.

Menu Questions

- 1) **Two triangles are similar. The first triangle has sides of 6, 8 and 12. The second triangle has sides of 2, 3, and X . What could X be? Please try to find all of the possibilities.*
- 2) **Two triangles are similar. The first triangle has sides of 6, 8 and 12. The second triangle has sides of 4, X and Y . What could X and Y be? Please try to find all of the possibilities.*
- 3) **Two triangles are similar. The first triangle has sides of 4, 6 and 9. The second triangle has sides of 2, 3 and Y . What could Y be? Please try to find all of the possibilities.*
- 4) ***Two triangles are similar. The first triangle has sides of 6, 10 and X . The second triangle has sides of 12, 9 and Y . What could X and Y be? Please try to find all of the possibilities.*



***5) Two quadrilaterals are similar. The first has sides of 4, 6, 8 and X . The second has sides of 15, 30, 40, and Y .

- a) What could X and Y be? Please try to find all of the possibilities.
- b) Which problem was easier for you, the one about the two triangles or the one about the two quadrilaterals? Why?
- c) In the example with the two triangles, there were four solutions. If you made up a similar example—two triangles with two sides of each given—will there always be four solutions? If not, could there be more? If not, how few could there be?

Note: original problem is “Two triangles are similar. The first triangle has sides of 6, 8 and X . The second triangle has sides of 18, 12, and Y . What could X and Y be? Please try to find all of the possibilities.”

