

Grade 7 · Drawing Geometric Figures and Constructing Triangles · Test

Common Core 7.G.A.2 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

This grade 7 constructing triangles test checks drawing geometric figures and constructing triangles in 45 minutes, with 8 questions for a total of 20 points.

This 45-minute test checks Common Core standard 7.G.A.2 on drawing triangles from given conditions. It has eight questions worth 20 points in total. Show every sum, write final answers with units, and explain your reasoning where a question asks for it.

Test information

- **Grade:** Grade 7
- **Chapter:** Drawing Geometric Figures and Constructing Triangles
- **Common Core:** 7.G.A.2
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 3 pts; Question 2: 2 pts; Question 3: 2 pts; Question 4: 2 pts; Question 5: 4 pts; Question 6: 2 pts; Question 7: 3 pts; Question 8: 2 pts)

Grade 7 Constructing Triangles Test: questions 1-5

Question 1: Triangle inequality (3 points)

Tell whether each set of lengths (in cm) can be the sides of a triangle.

- 6, 9, 14 (1 point)
- 5, 7, 12 (1 point)
- 8, 8, 15 (1 point)

Question 2: Third side (2 points)

Two sides of a triangle measure 8 in. and 11 in. The third side is a whole number of inches.

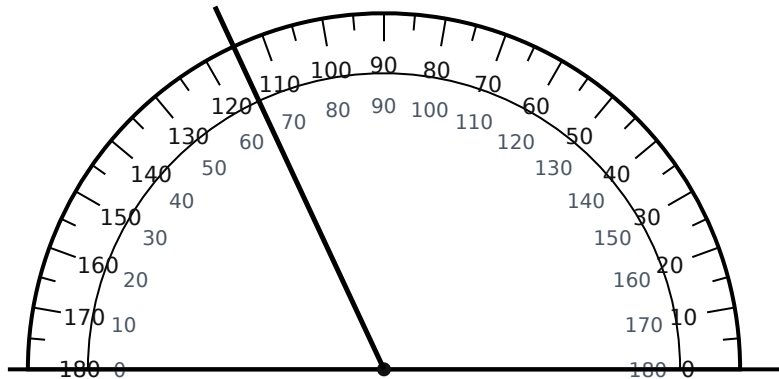
- Find the smallest possible length. (1 point)
- Find the largest possible length. (1 point)

Question 3: Angle measures (2 points)

- a. Two angles of a triangle measure 48° and 77° . Find the third angle. (1 point)
- b. Can a triangle have angles of 38° , 64° , and 79° ? Explain. (1 point)

Question 4: Protractor angle (2 points)

The side of an angle on the right lies on the 0 line of the protractor.



Angle on a protractor.

- a. Find the measure of the angle. (1 point)
- b. A triangle has this angle. Find the largest whole-number measure that another angle of the triangle can have. (1 point)

Question 5: How many triangles? (4 points)

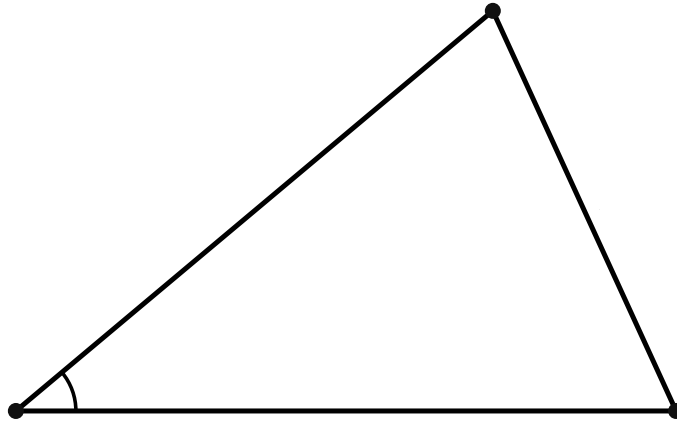
Tell whether each set of measurements gives exactly one triangle, more than one triangle, or no triangle.

- a. Sides 5 cm, 6 cm, 7 cm (1 point)
- b. Sides 3 cm, 4 cm, 8 cm (1 point)
- c. Angles 30° , 70° , 80° (1 point)
- d. Sides 5 cm and 8 cm with the 40° angle between them (1 point)

Grade 7 Constructing Triangles Test: questions 6-8

Question 6: Side-side-angle (2 points)

Jamal draws triangle ABC with $\angle A = 40^\circ$, $AC = 9$ cm, and $BC = 6$ cm. He says that no other triangle has these measurements. Is he correct? Explain.



Jamal's triangle.

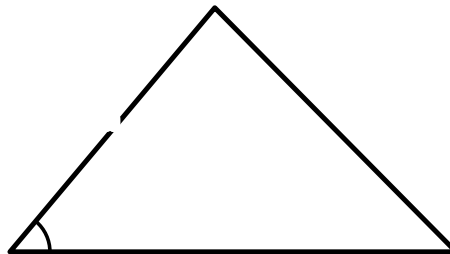
Question 7: Straws (3 points)

Sofia has straws that are 4 in., 6 in., and 11 in. long.

- Can she form a triangle with these three straws? Explain. (1 point)
- She cuts the 11 in. straw to a whole-number length. Find the smallest and largest lengths that let her form a triangle. (2 points)

Question 8: Construction steps (2 points)

Triangle ABC has $AB = 7$ cm, $AC = 5$ cm, and $\angle A = 50^\circ$.



Sketch of the triangle.

List, in order, the steps to draw this triangle with a ruler and a protractor.

How to use this grade 7 constructing triangles test

Take this grade 7 constructing triangles test without notes, then grade it with the test answer key out of 20 points.