

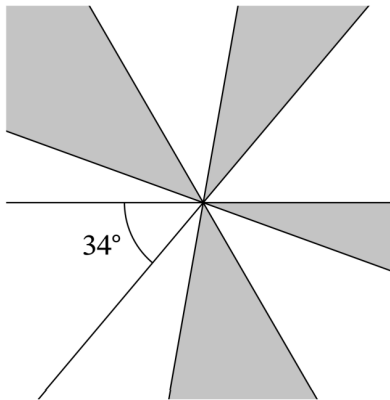
Segments and angles

№1. At half past eight, what is the angle between the hour hand and the minute hand of a clock?

№2. At some moment Anya measured the angle between the hour hand and the minute hand of her clock. Exactly one hour later, she measured the angle again and found it to be the same. What could this angle be? (Consider all possible cases.)

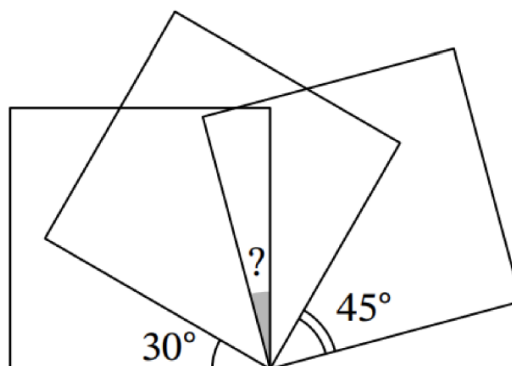
№3. Draw four rays OA , OB , OC , and OD with a common origin such that the diagram contains angles of 100° , 110° , 120° , 130° , and 140° . Indicate which angles have these measures.

№4. The figure shows five straight lines intersecting at one point. One of the resulting angles is equal to 34° . What is the sum, in degrees, of the four angles shaded in gray?



№5. Several points (more than two) are marked on a number line. Each point, except for the two extreme ones, lies exactly midway between two marked points. Is it possible that all segments containing no marked points inside have different lengths?

№6. The figure shows three squares. Find the marked angle if the two other angles in the figure are known.



№7. Doctor Aibolit wants to visit the cow, the she-wolf, the beetle, and the worm. All four live along the same straight road. Eagles are ready to take Aibolit in the morning to the first patient and pick him up in the evening from the last one, but he must walk the three intermediate segments on foot.

If Aibolit starts with the cow, the length of his shortest route is 6 km; if he starts with the she-wolf, it is 7 km; and if he starts with the beetle, it is 8 km.

Draw a possible arrangement of the houses of the cow, the she-wolf, the beetle, and the worm (one example is sufficient).

№8. Points A , B , C , D , and X are located in the plane. Some segment lengths are known:

$$AC = 2, \quad AX = 5, \quad AD = 11, \quad CD = 9, \quad CB = 10, \quad DB = 1, \quad XB = 7.$$

Find the length of segment CX .

№9. In the village of Matitika, along a straight road, live five friends in the following order: Alya, Bella, Valya, Galya, and Dilya. Each of them calculated the sum of distances (in meters) from her house to the houses of all the others.

Bella obtained 700, Valya 600, and Galya 650. How many meters are there between the houses of Bella and Galya?