

Constructions 4

Triangles from Sides and Angles

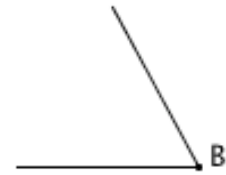
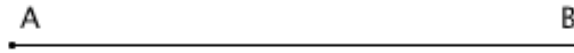
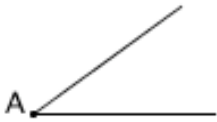
Use a straight edge and a compass perform the following constructions. You may find detailed demonstrations of these constructions at <http://www.mathopenref.com/tocs/constructionstoc.html>

Goals

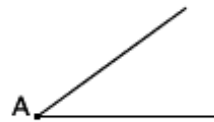
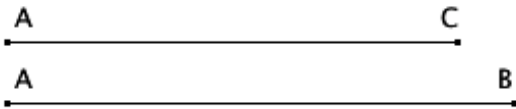
I can:

- construct a triangle given the by ASA
- can construct a triangle given SAS
- I can construct two non-congruent triangles given SSA

1. Construct a triangle given two angles and the included side (ASA). Leave clear and complete construction marks as justification.



2. Construct a triangle given two sides and the included angle (SAS).



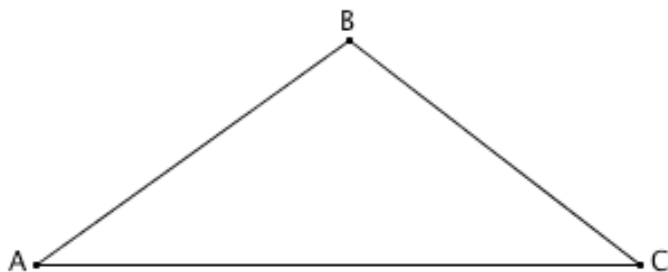
Name _____

Date _____

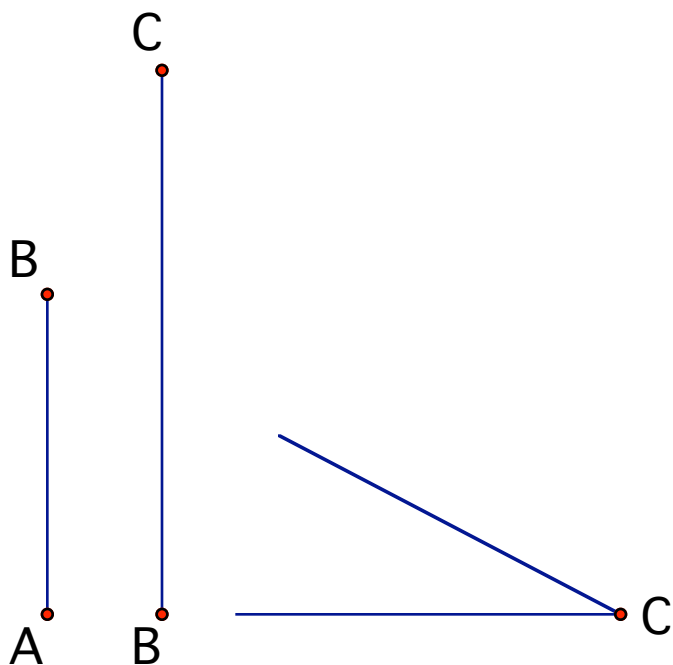
Class # _____

Block _____

3. Construct a copy of the triangle shown below.



4. Construct two different (not congruent) triangles using the two sides and the non-included angle (SSA) given below. In other words, the angle C is NOT between the two given sides.



Name _____

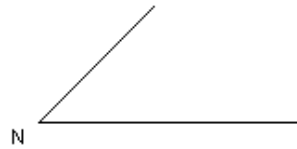
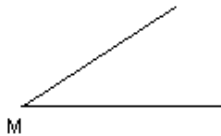
Date _____

Class # _____

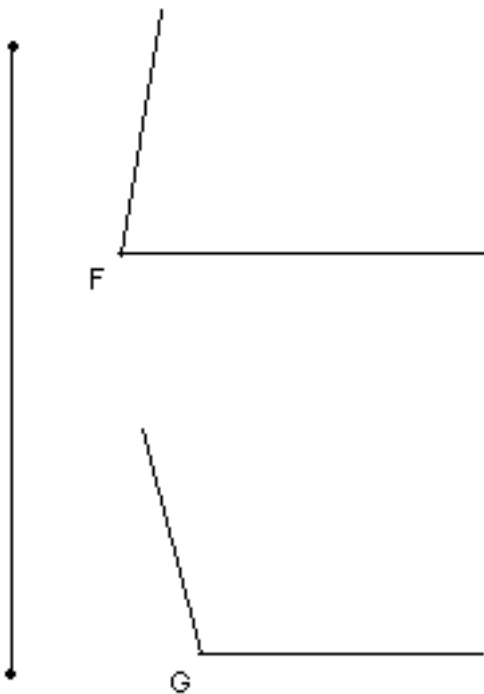
Block _____

Practice

1. Construct a triangle which has one side equal to the given line segment and where the angles at each end of that segment are equal in measure to the angles M and N .



2. Construct a triangle which has one side equal to the given line segment and where the angles at each end of that segment are equal in measure to the angles F and G . Explain any problem you may have with the construction. (For a hint see "Interior Angles of a Triangle" at <http://www.mathopenref.com/triangleinternalangles.html>)



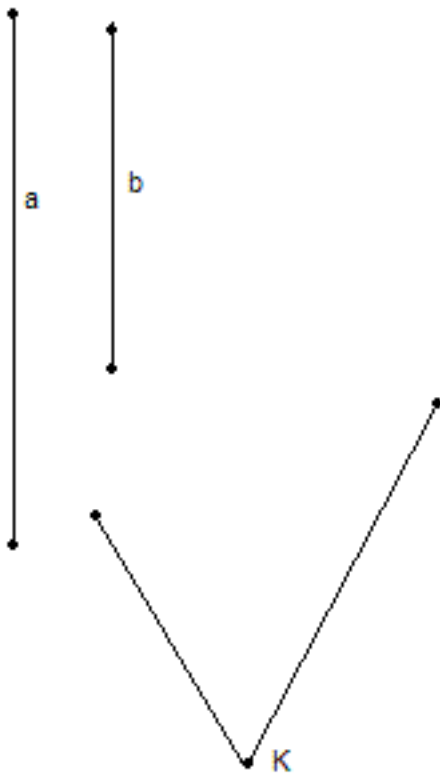
Name _____

Date _____

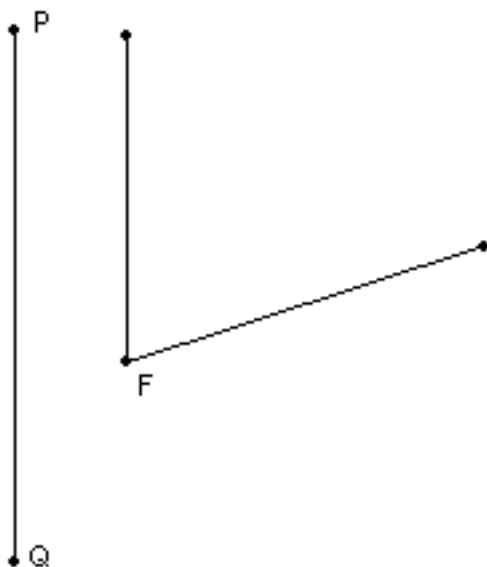
Class # _____

Block _____

3. Construct a triangle has two sides congruent to the given line segments a and b and where the included angle is equal in measure to the angle K .



4. a. Construct a triangle which has two sides both equal to the given line segment PQ, and where the angle between them has the same measure as the angle F.
- b. What is the exact name of the type of triangle drawn in this construction?



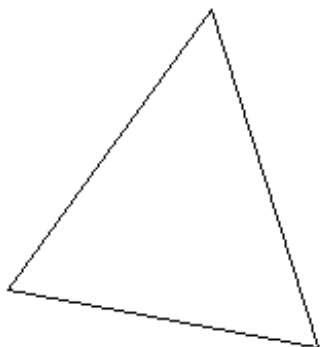
Name _____

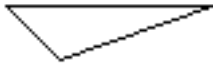
Date _____

Class # _____

Block _____

5. Construct a copy of the triangle below. Justify with clear and complete construction marks.



6. Construct a copy of the triangle below, but reversed left-to-right and upside down, like this: . Justify with clear and complete construction marks.

