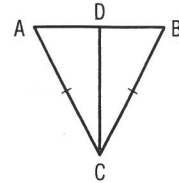


Congruent triangles

- 1** Identify each geometric statement which allows you to conclude that the adjacent triangles $\triangle ACD$ and $\triangle BCD$ are congruent, considering that:

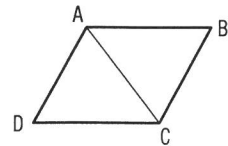


- a) \overline{CD} is a median. _____

- b) \overline{CD} is a bisector of angle $\angle ACB$. _____

- c) \overline{CD} is the perpendicular bisector of segment \overline{AB} . _____

- 2** In the adjacent illustration, \overline{AC} is a diagonal in the parallelogram $ABCD$. Complete the following proof to show that $\triangle ABC$ and $\triangle ACD$ are congruent.



a)

STATEMENT	JUSTIFICATION
$\triangle ABC \cong \triangle ACD$	Two triangles that have corresponding congruent sides are congruent (SSS).

b)

STATEMENT	JUSTIFICATION
$\triangle ABC \cong \triangle ACD$	Two triangles that have one congruent angle contained between corresponding congruent sides are congruent (SAS).

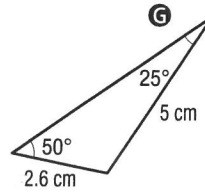
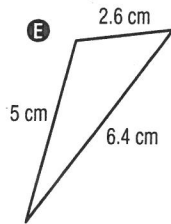
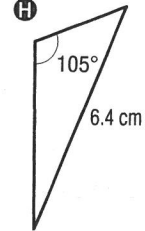
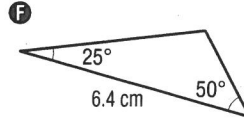
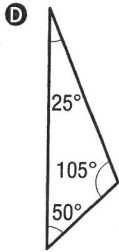
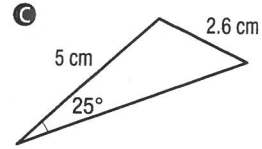
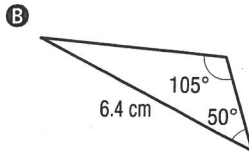
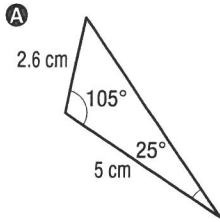
c)

STATEMENT	JUSTIFICATION
$\triangle ABC \cong \triangle ACD$	Two triangles that have one congruent side contained between corresponding congruent angles are congruent (ASA).

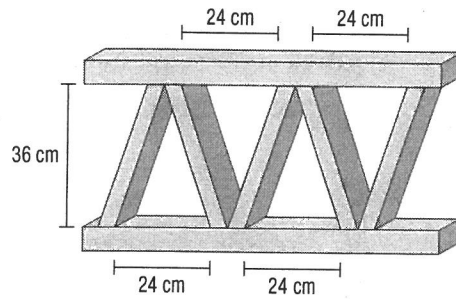
Name: _____

Group: _____ Date: _____

3 Identify pairs of congruent triangles using the triangles below.



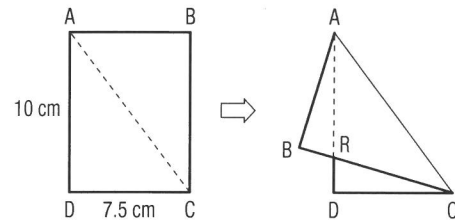
4 The adjacent illustration depicts a construction beam used to support a floor. The five straight pieces of wood are equal in length.



a) What geometric statement allows you to state that there are 4 congruent triangles within the beam?

b) What is the length of one of the straight pieces of wood?

5 A piece of rectangular paper is folded lengthwise, along one of its diagonals, as shown in the adjacent illustration.



a) Complete the table below to show that triangles ABR and CDR are congruent.

STATEMENT	JUSTIFICATION
$\overline{AB} \cong \overline{CD}$	1)
$\angle B \cong \angle D$	2)
$\angle ARB \cong \angle CRD$	3)
$\angle BAR \cong \angle DCR$	4)
$\triangle ABR \cong \triangle CDR$	5)

b) What is the perimeter of triangle ACR?

6 For the construction of the kite illustrated below, 7 thin pieces of wood and 2 pieces of fabric were required.

a) 1) What is the measure of the angle DFG?

2) On what geometric statement is your reasoning based?

b) 1) What is the measure of the angle ADB?

2) On what geometric statement is your reasoning based?

c) 1) What type of triangle is BCD?

2) On what geometric statement is your reasoning based?

d) What geometric transformation allows you to associate triangles ABD and BCD as well as triangles DFG and DEF?

