H4 *Congruence and Similarity* Data Sheets

Data Sheets

H4.1 Tests for Congruence
H4.2 Congruent Triangles
H4.3 Similar Shapes
H4.4 Similar Triangles
H4.5 Line, Area and Volume Ratios

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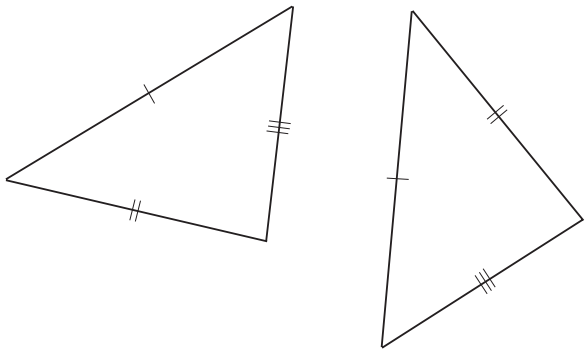
Data Sheet H4.1

Tests for Congruence

TEST 1 (Side, Side, Side)

If all three sides of one triangle are the same as the lengths of the sides of the second triangle, the two triangles are congruent.

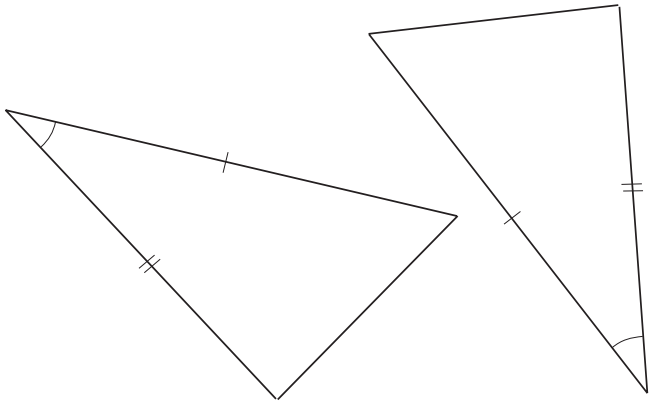
This test is referred to as *SSS*.



TEST 2 (Side, Angle, Side)

If two sides of one triangle are the same length as two sides of the other triangle and the angle *between* these two sides is the same in both triangles, the triangles are congruent.

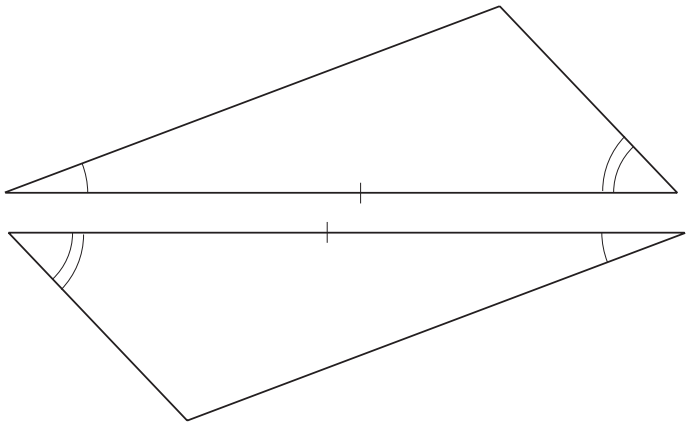
This test is referred to as *SAS*.



TEST 3 (Angle, Angle, Side)

If two angles and the length of one corresponding side are the same in both triangles, they are congruent.

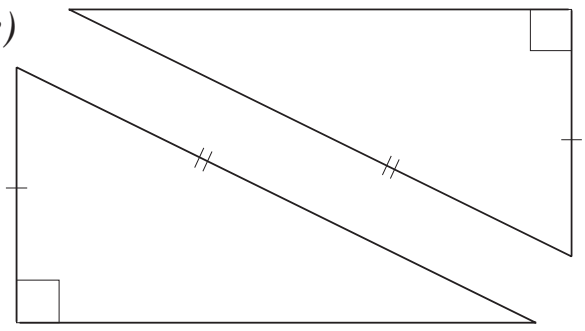
This test is referred to as *AAS*.



TEST 4 (Right angle, Hypotenuse, Side)

If both triangles contain a right angle, have hypotenuses of the same length and one other side of the same length, they are congruent.

This test is referred to as *RHS*.



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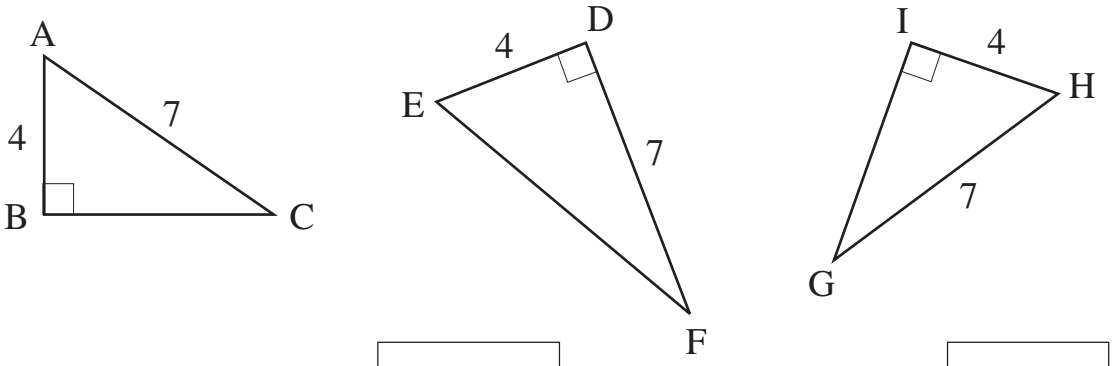
Data Sheet H4.2

Congruent Triangles

In each of the following groups of triangles, which triangles are congruent and which congruency test has been used?

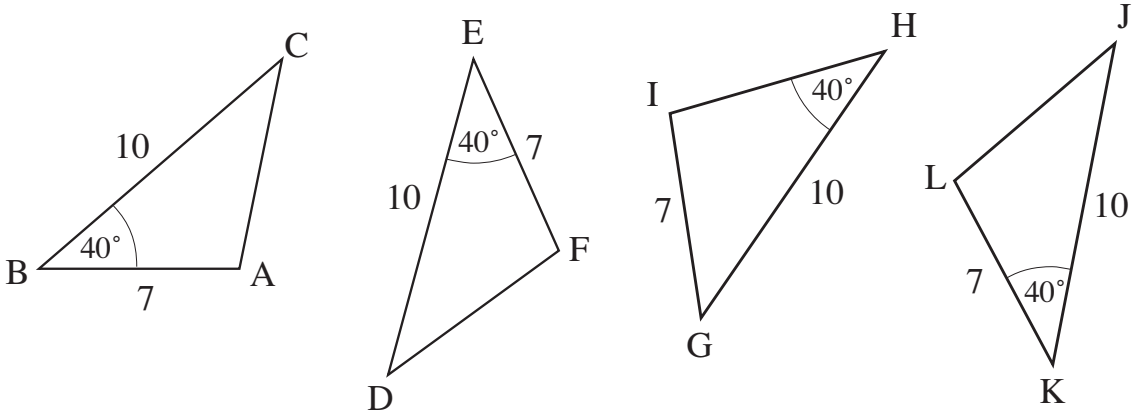
Given lengths are in cm.
Drawings are not to scale.

A



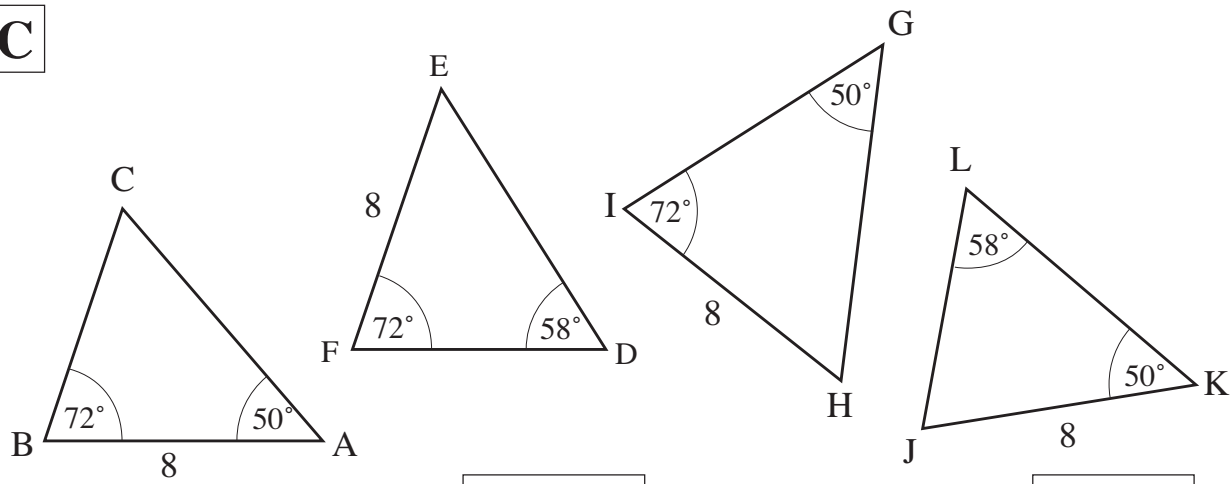
Congruent triangles ____ ; Congruency test ____

B



Congruent triangles ____ ; Congruency test ____

C



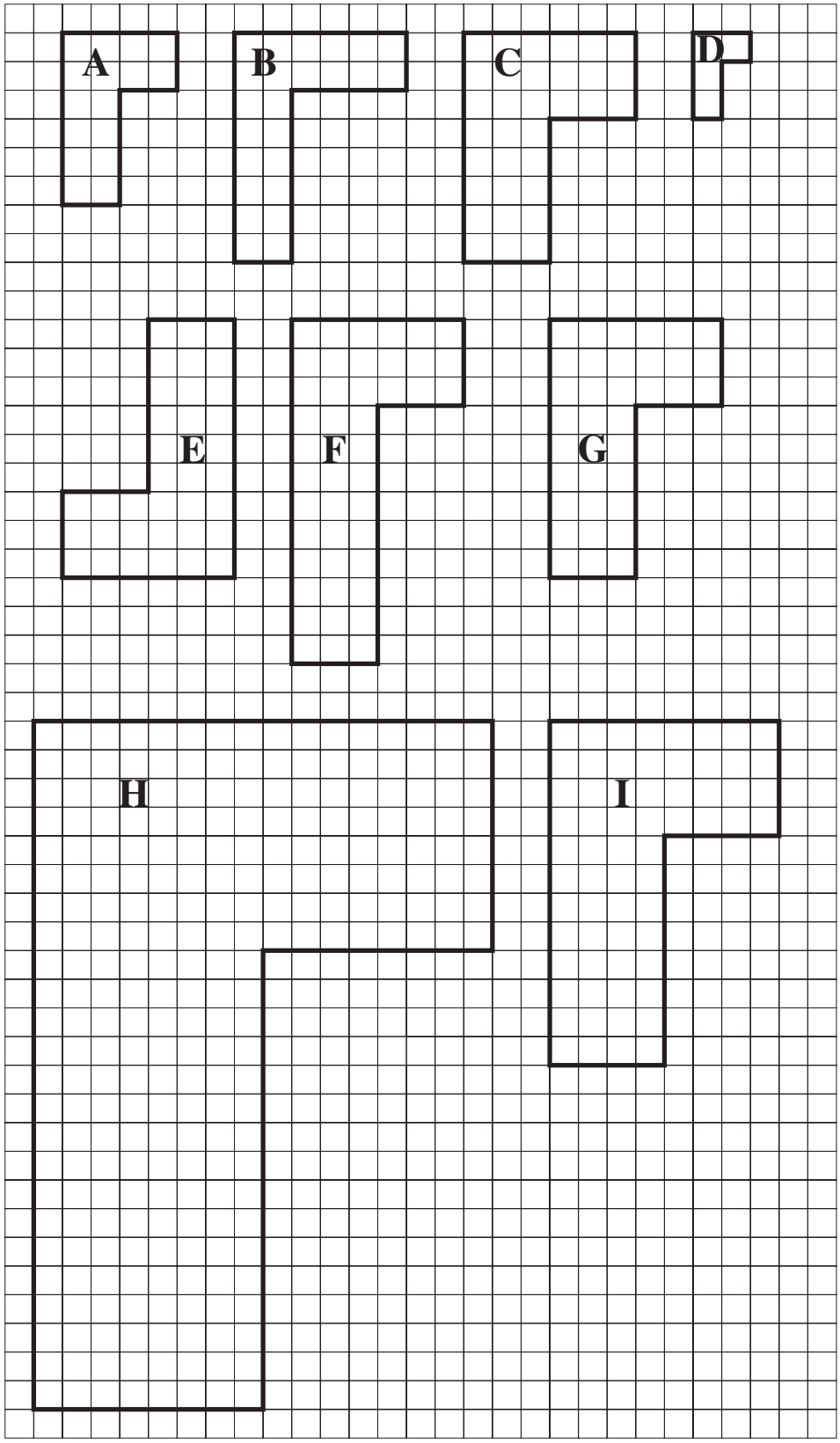
Congruent triangles ____ ; Congruency test ____

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Data Sheet H4.3

Similar Shapes

Which of these shapes are similar to shape A?



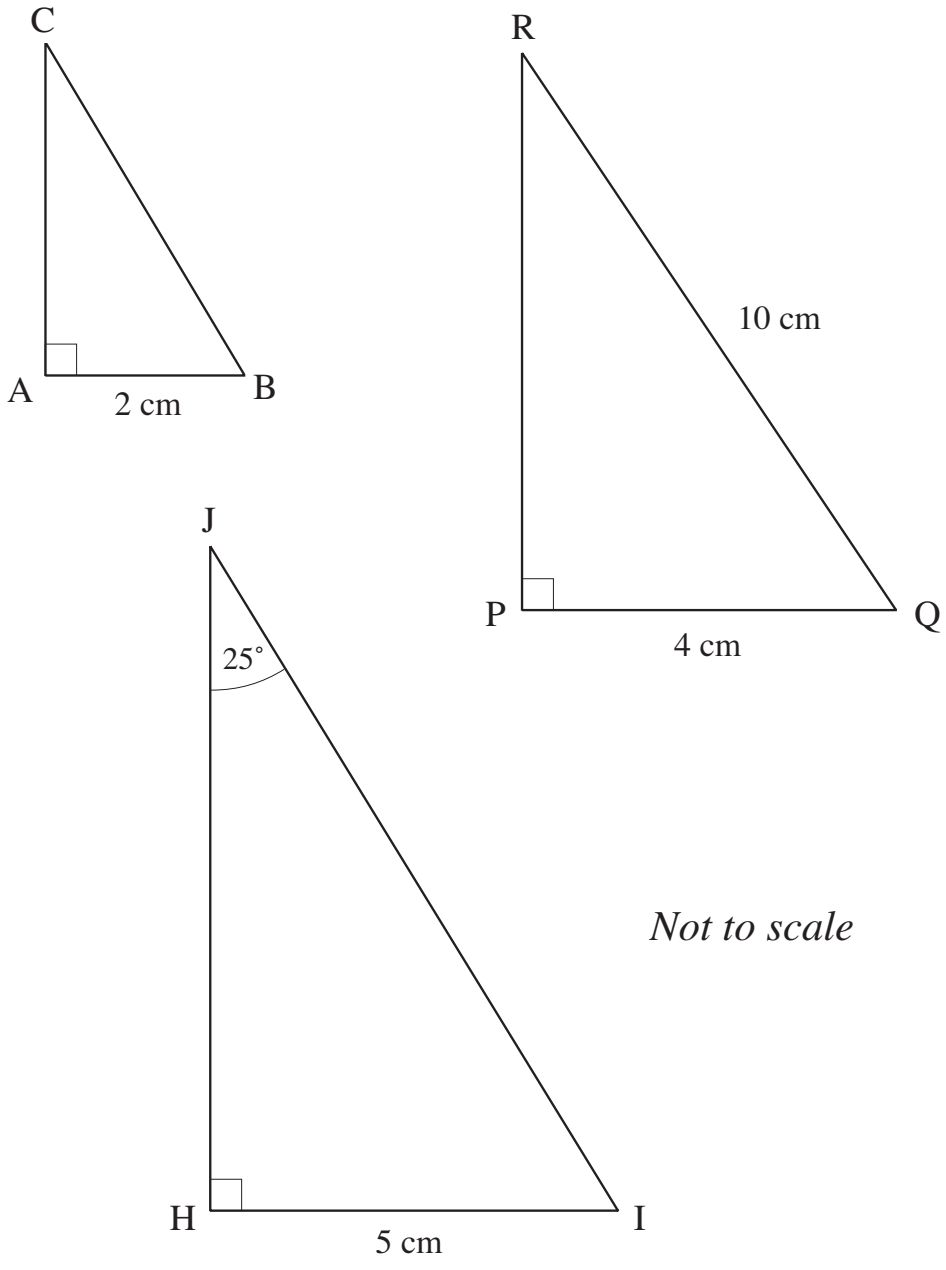
Shapes

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Data Sheet H4.4

Similar Triangles

Triangles ABC, PQR and HIJ are all *similar*.



Not to scale

(a) Length of CB = ☐ cm

(b) Length of IJ = ☐ cm

(c) Angle PQR = ☐ °

(d) Angle ABC= ☐ °

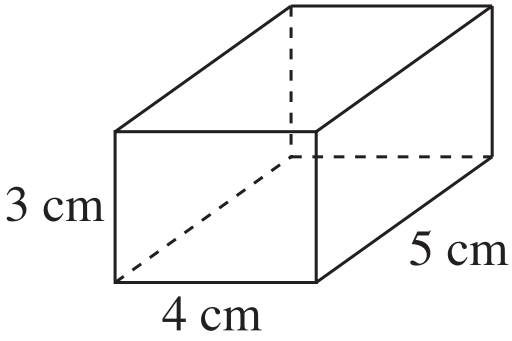
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Data Sheet H4.5

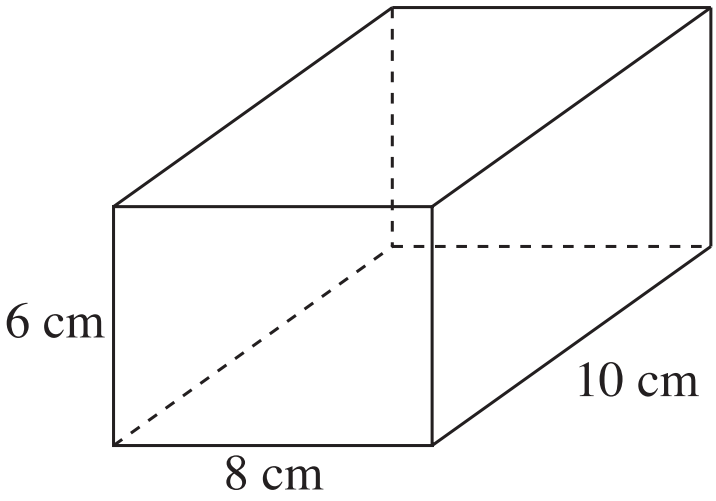
Line, Area and Volume Ratios

The diagrams show two similar cuboids:

Cuboid A



Cuboid B



Volume of cuboid A = ☐ cm^3

Volume of cuboid B = ☐ cm^3

Surface area of cuboid A = ☐ cm^2

Surface area of cuboid B = ☐ cm^2

Lengths increase by a factor of ☐

Areas increase by a factor of ☐ = ☐^{2}

Volumes increase by a factor of ☐ = ☐^{3}

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