

Congruent Triangles

Video 67 on www.corbettmaths.com

Examples



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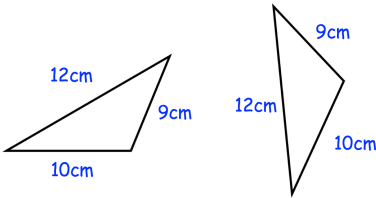


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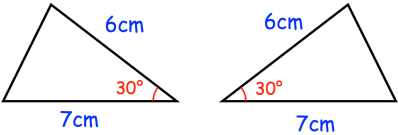
Workout

Question 1: The following pairs of triangles are congruent, state the condition that shows they are congruent.

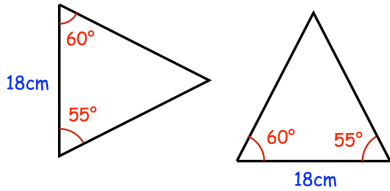
(a)



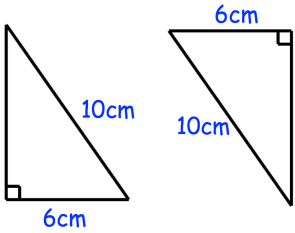
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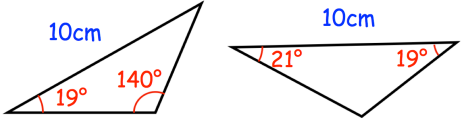
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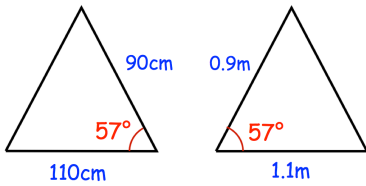
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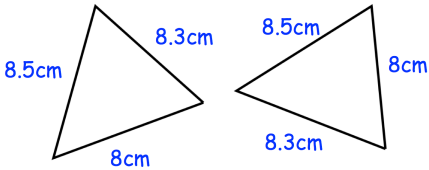
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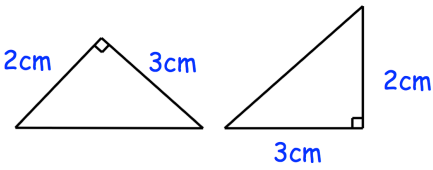
(f)



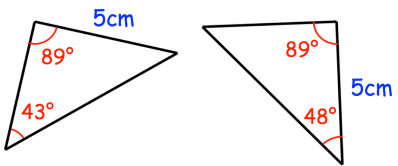
(g)



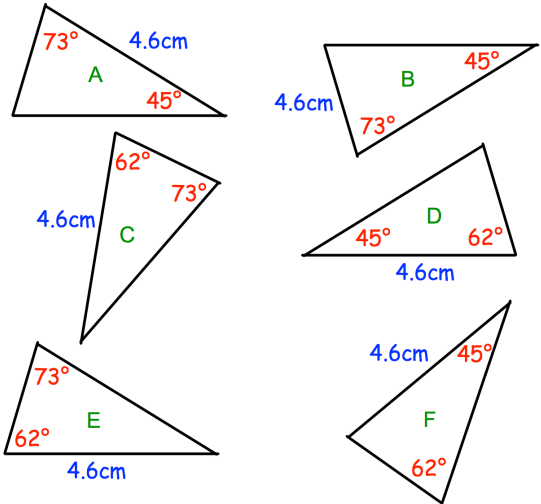
(h)



(i)



Question 2: Shown are six triangles. Which triangles are congruent?



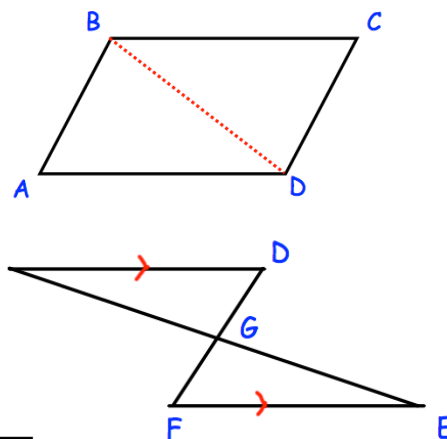
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- Question 3: In triangle ABC, $AB = 7\text{cm}$, $\angle BAC = 50^\circ$ and $\angle ABC = 35^\circ$
 In triangle DEF, $EF = 7\text{cm}$, $\angle DEF = 35^\circ$ and $\angle DFE = 50^\circ$
 Are triangles ABC and DEF congruent? If they are, state the condition.
- Question 4: In triangle GHI, $GH = 7\text{cm}$, $HI = 4\text{cm}$ and $GI = 5\text{cm}$.
 In triangle JKL, $JK = 7\text{cm}$, $KL = 4.5\text{cm}$ and $JL = 5\text{cm}$.
 Are triangles GHI and JKL congruent? If they are, state the condition.
- Question 5: In triangle MNO, $\angle MNO = 50^\circ$, $\angle NOM = 60^\circ$ and $\angle OMN = 70^\circ$
 In triangle PQR, $\angle PQR = 50^\circ$, $\angle QRP = 60^\circ$ and $\angle RPQ = 70^\circ$
 Are triangles MNO and PQR congruent? If they are, state the condition.
- Question 6: In triangle STU, $SU = 13\text{cm}$, $\angle TSU = 20^\circ$ and $\angle TUS = 30^\circ$
 In triangle VWX, $WX = 13\text{cm}$, $\angle WXV = 30^\circ$ and $\angle XVW = 20^\circ$
 Are triangles STU and VWX congruent? If they are, state the condition.

Apply

- Question 1: Hannah and Chris each draw a triangle with one side of 3cm, one angle of 35° and one angle of 80° .
 Hannah says their triangles **must** be congruent.
 Is Hannah correct?
- Question 2: Paul and Greg each draw a triangle with one side of 3cm, one side of 9cm and one side of 10cm.
 Greg says their triangles **must** be congruent.
 Is Greg correct?
- Question 3: Carl and Michael each draw a triangle with one angle of 58° , one angle of 68° and one angle of 54° .
 Carl says their triangles **must** be congruent.
 Is Carl correct?
- Question 4: ABCD is a parallelogram.
 Prove that triangles ABD and BCD are congruent.
- Question 5: In the diagram, the lines CE and DF intersect at G.
 CD and FE are parallel and $CD = FE$.
 Prove that triangles CDG and EFG are congruent.



Answers



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