

Watch. Practice. Understand. | Lesson 073

The Heart and the Soul of CPCTC (Big Idea Geometry Section 5.7)

Watch the matching video: <https://www.youtube.com/watch?v=OpsOr5rnQY0>

Practice focus: Triangles, congruence and inequality

Original extra practice matched to the listed lesson topic.

Name: _____ Date: _____ Show your reasoning and check units.

01 A triangle has angles x , $2x$ and $3x$ degrees. Find and classify its angles.

02 Can sides of lengths 4, 7 and 12 form a triangle?

03 Two triangles have matching sides 5 and 8 and the included angle 40° . Are they congruent?

04 In congruent triangles ABC and DEF (in that order), $AB = 7$ and angle $C = 50^\circ$. Find DE and angle F.

Worked answers | Lesson 073

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01 A triangle has angles x , $2x$ and $3x$ degrees. Find and classify its angles.

$6x = 180$, so angles are 30° , 60° , 90° . It is a right triangle.

02 Can sides of lengths 4, 7 and 12 form a triangle?

No: $4 + 7 = 11 < 12$ violates the triangle inequality.

03 Two triangles have matching sides 5 and 8 and the included angle 40° . Are they congruent?

Yes, by SAS. The equal angle must be included between the matched sides.

04 In congruent triangles ABC and DEF (in that order), $AB = 7$ and angle $C = 50^\circ$. Find DE and angle F.

Corresponding parts of congruent triangles are congruent: $DE = 7$ and angle $F = 50^\circ$.