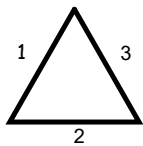


Angles and Triangles:

- Triangles are three sided polygons.

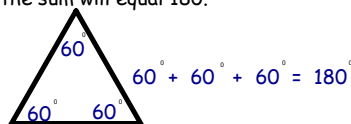


- Every triangle has three interior angles.

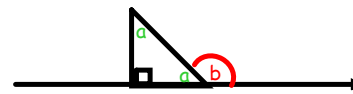


Interior angles in a triangle

- When you add all three interior angles in a triangle the sum will equal 180° .



- In order to determine some angles in a triangle, you may need to recall information that you have learned previously. For instance, you may need to recall what you know about classifying triangles (scalene, equilateral and isosceles), or knowledge of angles (straight angles are 180, acute angles are less than 90 and so on).

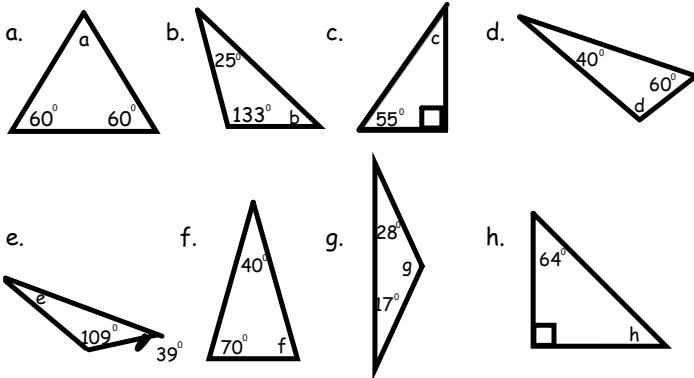


In this particular example, they want you to find out how big both angle a and b are. You will need to use your previous knowledge on angles and triangles to help you solve this question. The first thing you should notice is that there are two angles labelled as angle a. Therefore, the type of triangle you are working with is an isosceles triangle. This means that two of your angles need to be equal. When we look at the question, we notice that we have two angle a's in the diagram. We also know that the little square in the corner on the triangle means that angle is 90° . If the sum of the interior angles in a triangle need to add up to 180° , and we know that the right angle is 90° , we can subtract 90° from 180° , which leaves us with 90° . Now, with the remaining 90° , we need to divide into 2 because our two "a" angles need to equal the same amount. So, therefore each angle "a" is worth 45° .

To find angle "b", we need to use our knowledge on straight angles. When we add both angle "a" and "b" together, it needs to add up to 180° . We already know that angle "a" is 45° , so we can subtract 45° from 180° which is 135° . Therefore, angle "b" is 135° .

Interior Angles in Triangles:

1. Find all the missing interior angles in each triangle.



2. Check the following table to see if Bella created any triangles.

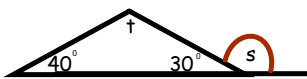
	$\sphericalangle a$	$\sphericalangle b$	$\sphericalangle c$
Shape 1	161°	15°	8°
Shape 2	78°	42°	70°
Shape 3	17°	108°	56°

3. Determine the missing angle when two angles are provided.

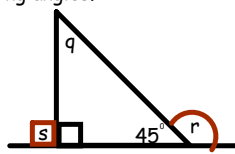
- a) 27, 118
- b) $91^\circ, 59^\circ$
- c) $30^\circ, 30^\circ$
- d) 76, 22
- e) $50^\circ, 50^\circ$
- f) $65^\circ, 55^\circ$

4. Determine the measure of the missing angles.

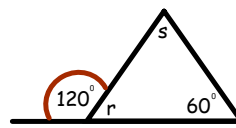
a.



b.



c.



Drawing Triangles:

In order to draw a triangle properly, you need to have a ruler and a protractor.

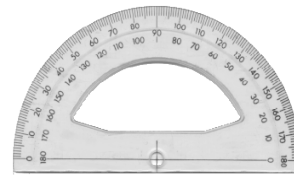
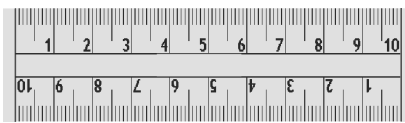
Example:

Draw $\triangle CDE$

CD is 5 cm

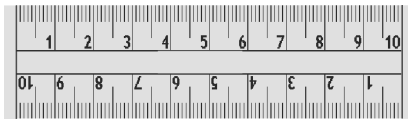
Angle C is 40°

Angle D is 100°



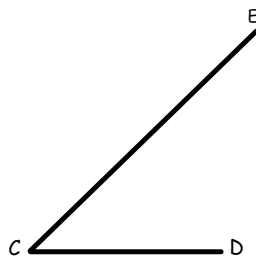
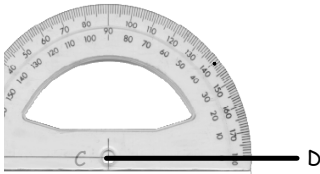
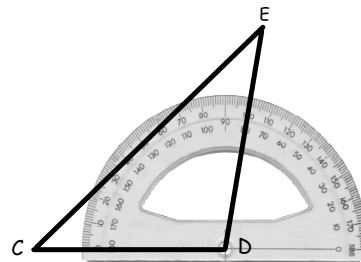
- Using a ruler, draw a straight line that is 10 cm in length. Label it CD.

C ————— D



- Take your protractor and line up your line with the base line on the protractor. Make sure the center circle of the protractor is on the vertex of angle C. Measure out 40° and label it E. Join point C with point E with a straight line.

- To make angle D, follow the same steps as in #2, except you are making your angle at D and drawing a 100° angle.



1. Draw the following triangles using a ruler and a protractor:

a) $\triangle UVW$

$$UV = 8 \text{ cm}$$

$$\angle U = 35^\circ$$

$$\angle V = 40^\circ$$

b) $\triangle LMN$

$$\angle M = 70^\circ$$

$$LM = 5.3 \text{ cm}$$

$$\angle L = 51^\circ$$

c) $\triangle QRS$

$$\angle S = 86^\circ$$

$$QS = 7 \text{ cm}$$

$$\angle Q = 56^\circ$$

d) $\triangle FGH$

$$FG = 3 \text{ cm}$$

$$\angle G = 90^\circ$$

$$GH = 5 \text{ cm}$$

e) $\triangle RST$

$$RT = 3 \text{ cm}$$

$$RS = 6 \text{ cm}$$

$$\angle R = 76^\circ$$

f) $\triangle QRS$

$$\angle R = 18^\circ$$

$$RS = 5.6 \text{ cm}$$

$$\angle S = 27^\circ$$