

Discussion Problems

Step 1: Measure with a Protractor

National Curriculum Objectives:

Mathematics Year 6: (6G2a) [Compare and classify geometric shapes based on their properties and sizes](#)

Mathematics Year 6: (6G3a) [Draw 2-D shapes using given dimensions and angles](#)

Mathematics Year 6: (6G4a) [Find unknown angles in any triangles, quadrilaterals, and regular polygons](#)

Mathematics Year 6: (6G4b) [Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles](#)

About this resource:

This resource has been designed for pupils who understand the concepts within [this step](#). It provides pupils with more opportunities to enhance their reasoning and problem solving skills through more challenging problems. Pupils can work in pairs or small groups to discuss with each other about how best to tackle the problem, as there is often more than one answer or more than one way to work through the problem.

There may be various answers for each problem. Where this is the case, we have provided one example answer to guide discussion.

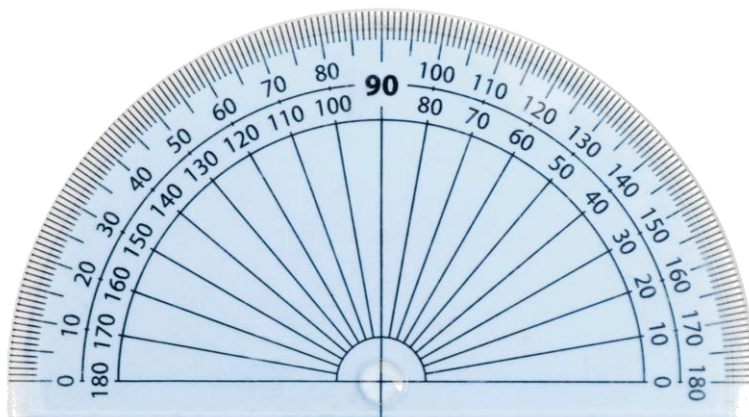
We recommend self or peer marking using the answer page provided to promote discussion and self-correction.

More [Year 6 Properties of Shapes](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Measure with a Protractor

1. Look at the protractor below.

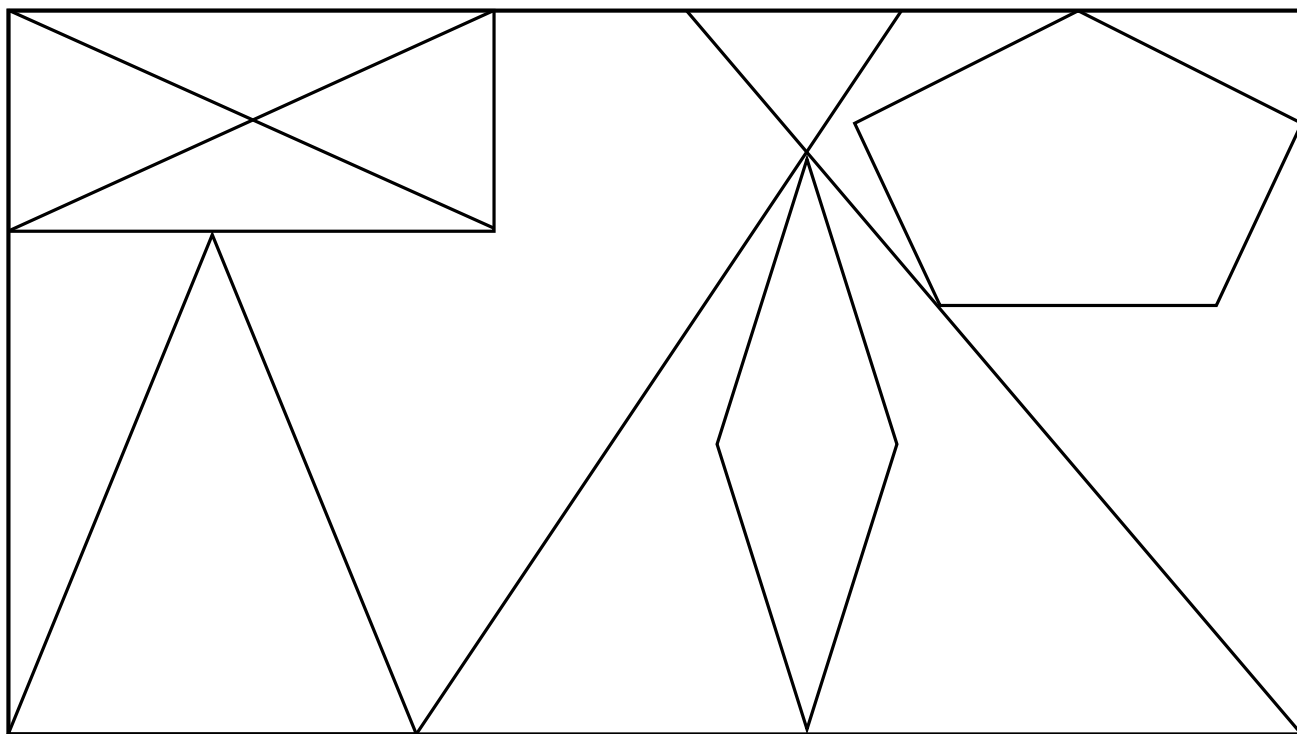


Why does it have an inner scale and an outer scale?

What do you notice about the labels at the same degree point on the inner scale and the outer scale?

DP

2. Identify the acute, obtuse and reflex angles in the image below.

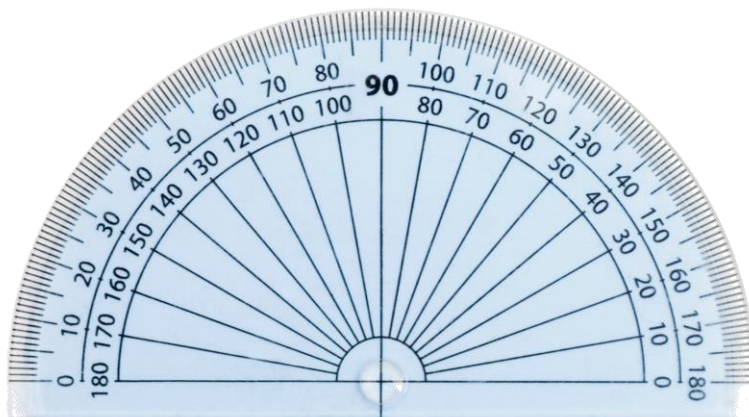


Find acute angles which are less than 60° .

DP

Measure with a Protractor

1. Look at the protractor below.



Why does it have an inner scale and an outer scale?

A protractor has two scales so that measurements can be read in a clockwise or anti-clockwise direction, depending on the orientation of the angle.

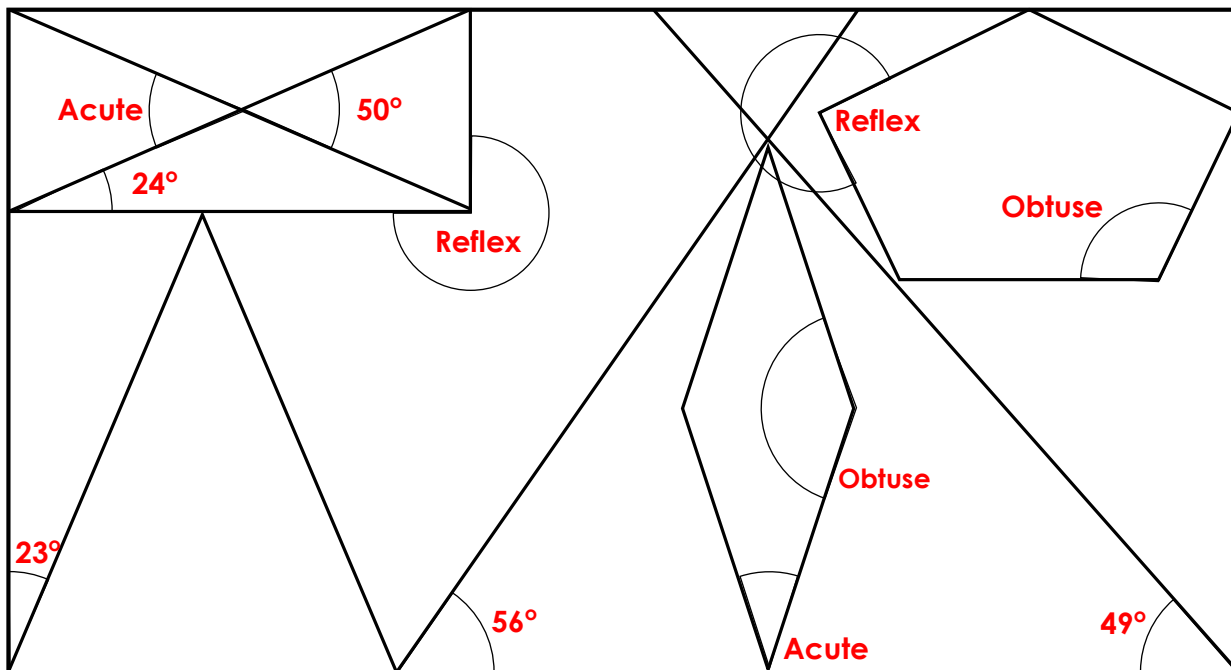
What do you notice about the labels at the same degree point on the inner scale and the outer scale?

The numbers at each point add up to 180° .

DP

2. Identify the acute, obtuse and reflex angles in the image below.

Various possible answers, for example:



Find acute angles which are less than 60° .

DP