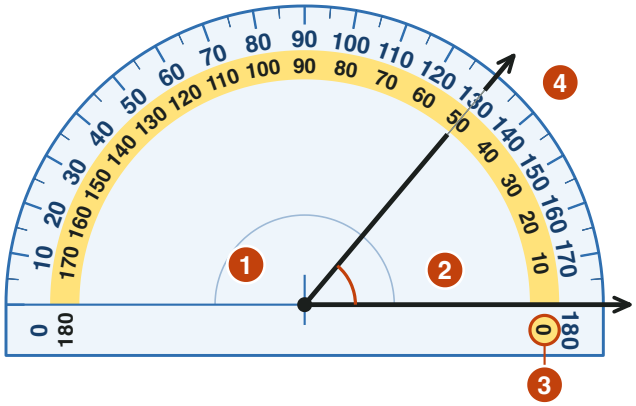
How to Use a Protractor

A protractor measures how far an angle opens. The answer is in degrees (°).

1. Measure an angle in four steps

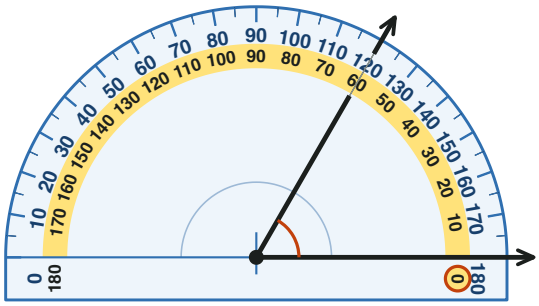


1. Put the **center mark** on the corner of the angle. The corner is called the **vertex**.
2. Turn the protractor until the **zero line** lies along one side of the angle.
3. Find the **0** on that side. That 0 tells you which scale to use.
4. Follow that scale to the other side of the angle. Read the number where the side crosses: **50°**.

2. Two scales: which one do I read?

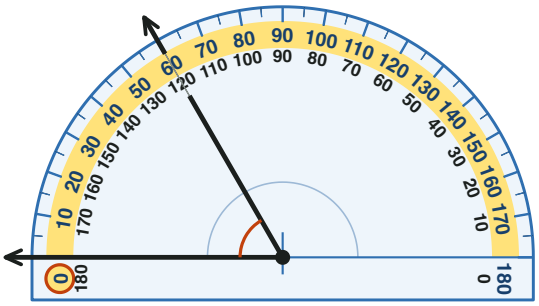
A protractor has two rows of numbers, so it can measure from the left or from the right. Start from the 0 that is on a side of your angle.

This angle opens to the right



Its bottom side points to the 0 on the **inside** scale. Read the inside numbers: **60°**. The other scale says 120.

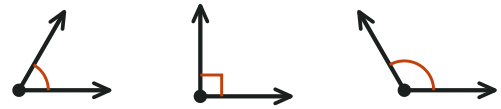
This angle opens to the left



Its bottom side points to the 0 on the **outside** scale. Read the outside numbers: **60°**. The other scale says 120.

3. Check: is the angle acute or obtuse?

Look at the angle **before** you read the numbers. Is it smaller or bigger than a square corner? Both angles above cross at 60 and at 120. They are smaller than a square corner, so each one is **60°**, not 120°.



Acute less than 90° | **Right** exactly 90° | **Obtuse** more than 90°

Drawing an angle of 70°

1. Draw one side with a ruler. Put a dot at one end. The dot is the vertex.

2. Put the center mark on the dot and the zero line along the side.

3. Start at the 0 on that side. Follow its scale to 70 and make a small mark.

4. Lift the protractor. Join the dot to the mark with a ruler.

Watch out

The wrong scale. An angle smaller than a square corner cannot be 120°. Read the other number.

The wrong spot. The center mark goes exactly on the vertex. Line up the zero line, not the bottom edge.