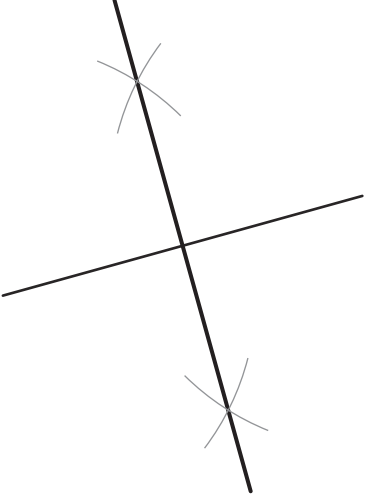
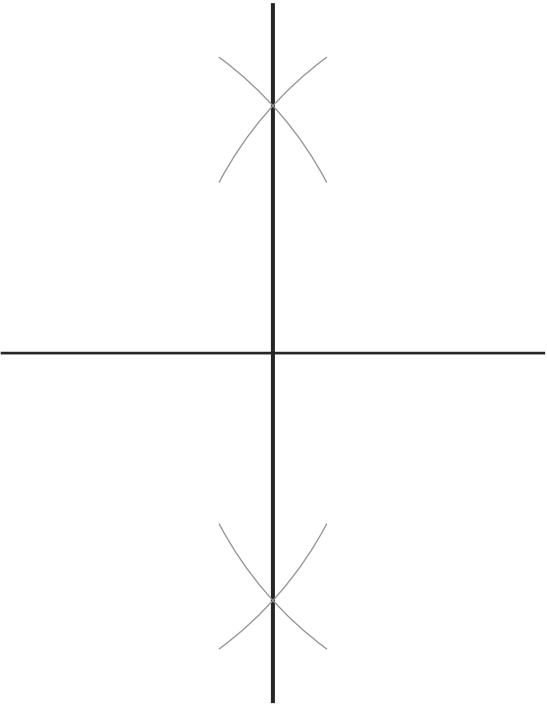
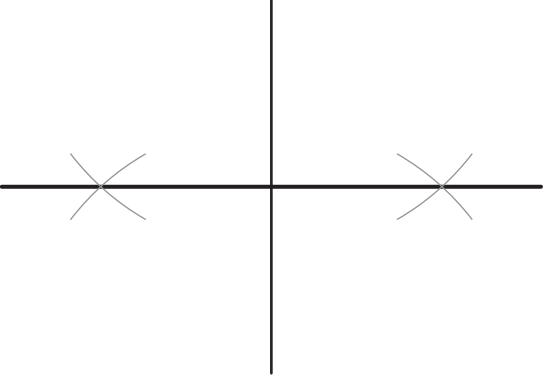
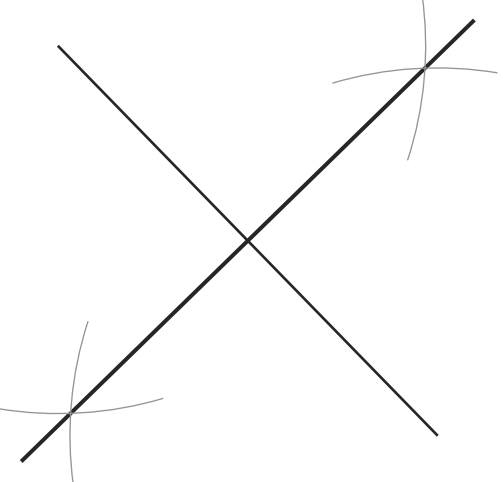
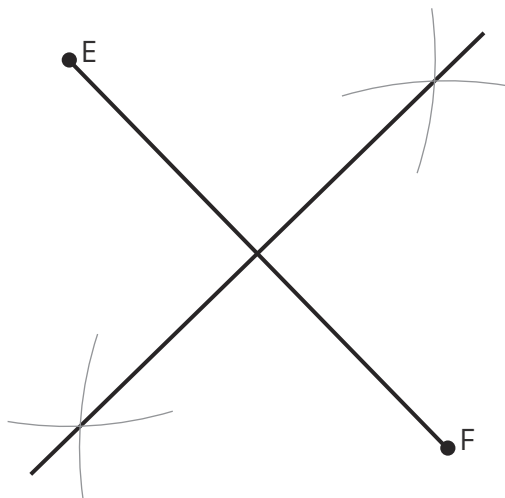
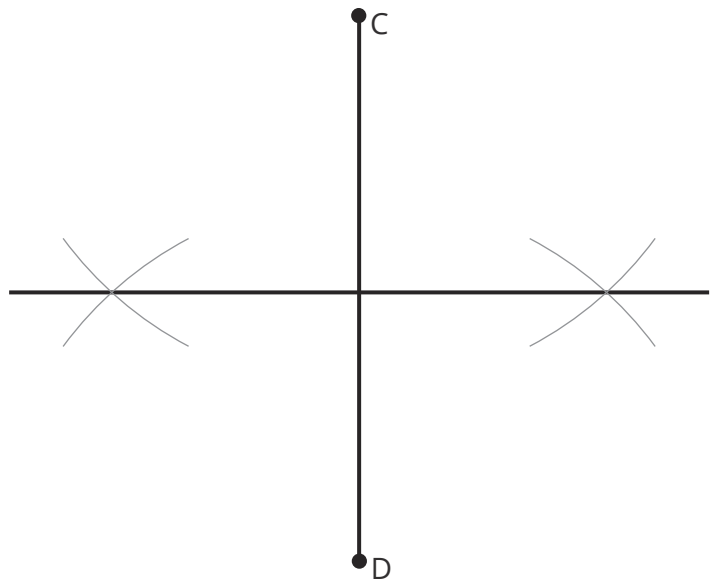
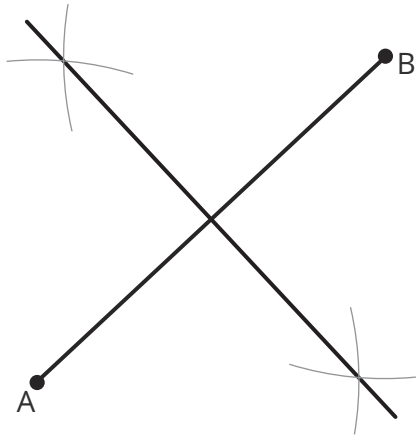


**Your Turn**

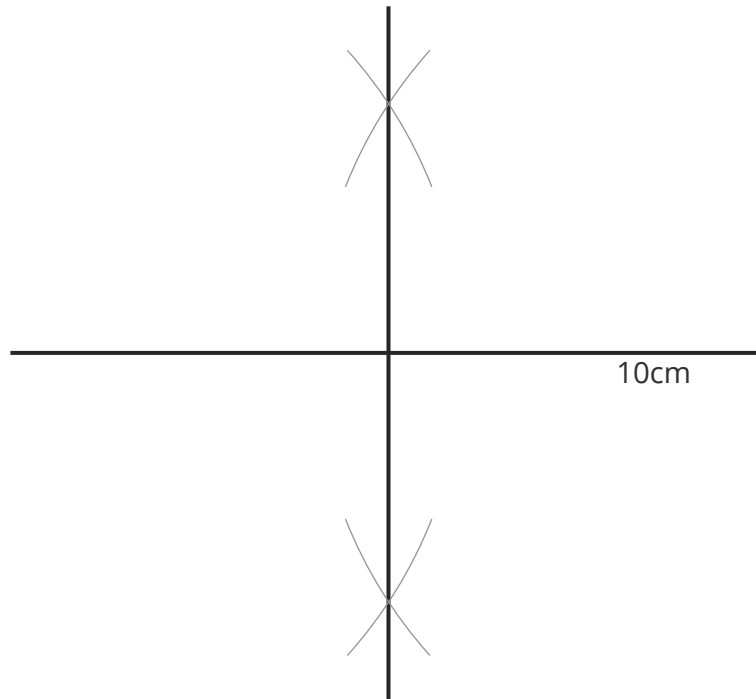
1. Construct the perpendicular bisectors of the following lines:

<p>a.</p> 	<p>c.</p> 
<p>b.</p> 	<p>d.</p> 

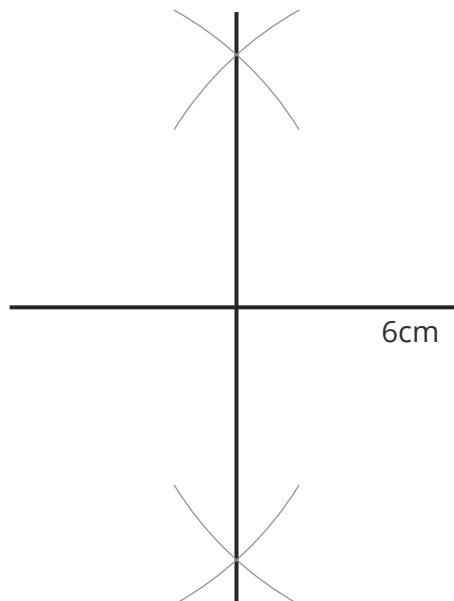
2. Draw the perpendicular bisector of the points AB, CD and EF.



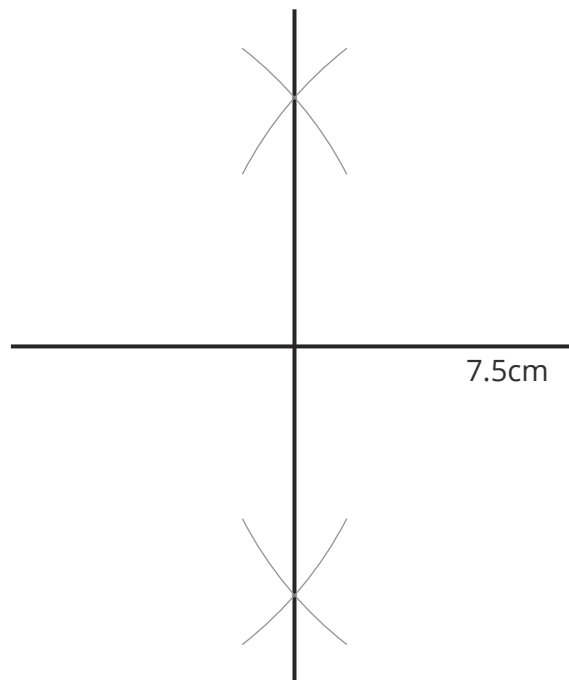
3. Draw a 10cm line and construct its perpendicular bisector.



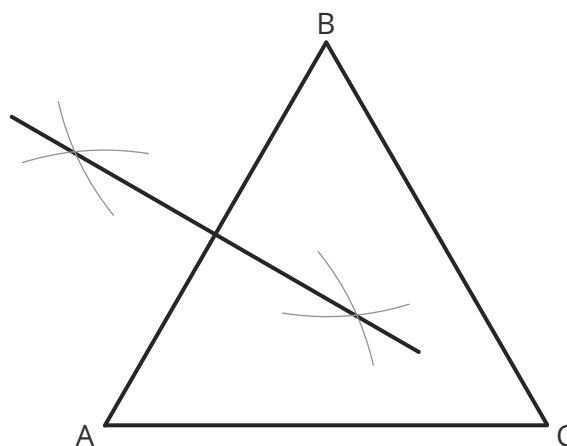
4. Draw a 6cm line and construct its perpendicular bisector.



5. Draw a 7.5cm line and construct its perpendicular bisector.

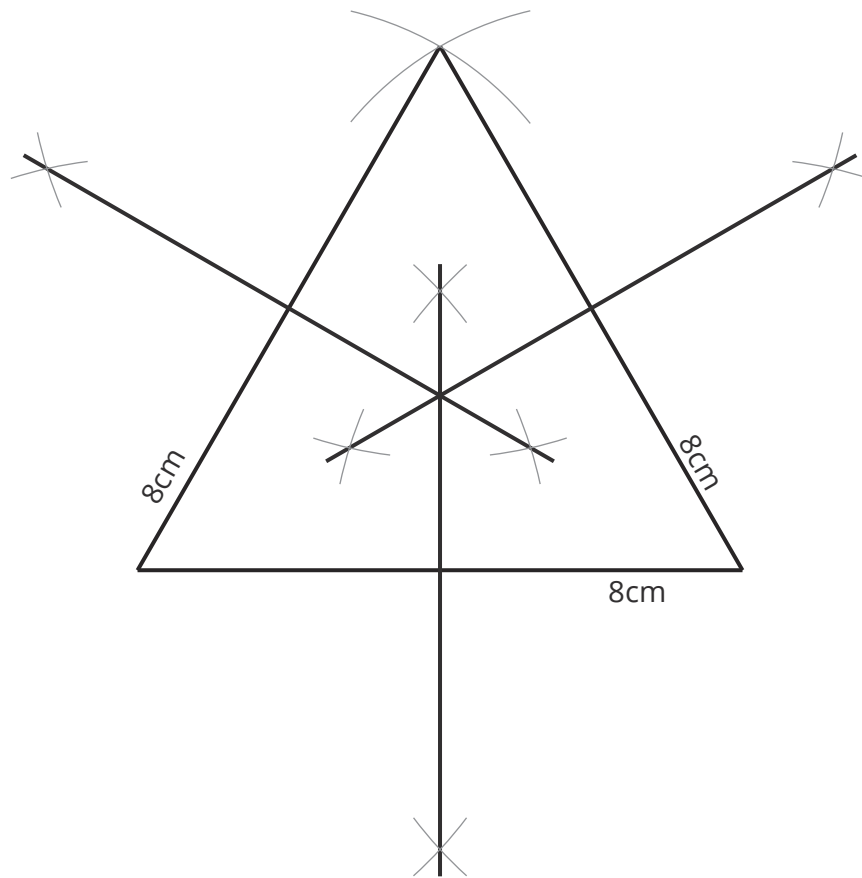


6. Construct the perpendicular bisector of the line AB in the following shape.



**Challenge**

Use your compasses and ruler to construct an equilateral triangle of side length 8cm and then construct the perpendicular bisector of each side.

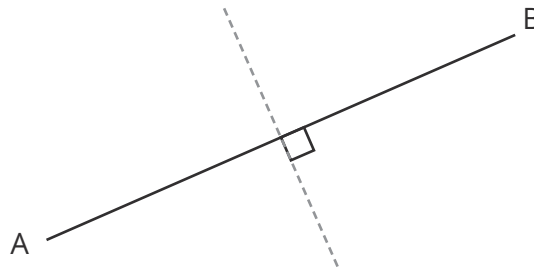


# Perpendicular Bisectors

**Perpendicular bisectors** are a type of **loci** (which is plural for **locus**). A **locus** is a **line** or **region** that **shows all the points** which **fit a given rule**.

A **perpendicular bisector** is the locus of points which are **equidistant** (the same distance) **from two given points**.

For example, the **perpendicular bisector** of line segment AB is a line at **right angles** to AB, passing through the **midpoint** of AB.



To construct a **perpendicular bisector**, you will need:

- a pencil
- a ruler
- a pair of compasses

## For example

Draw an 8cm line and construct its perpendicular bisector.

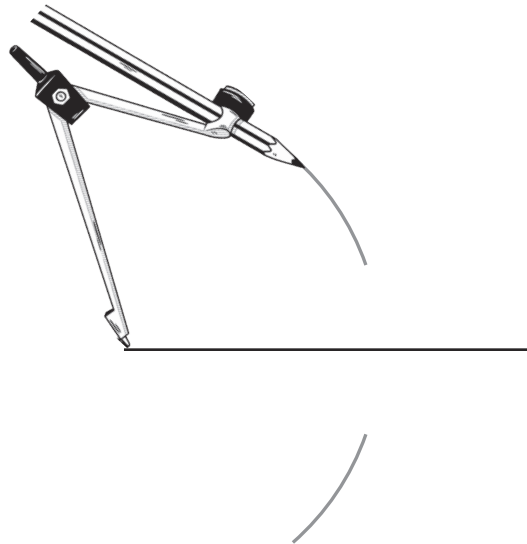
**Step 1:** Draw a line measuring 8cm. It is important you use a ruler and a pencil.



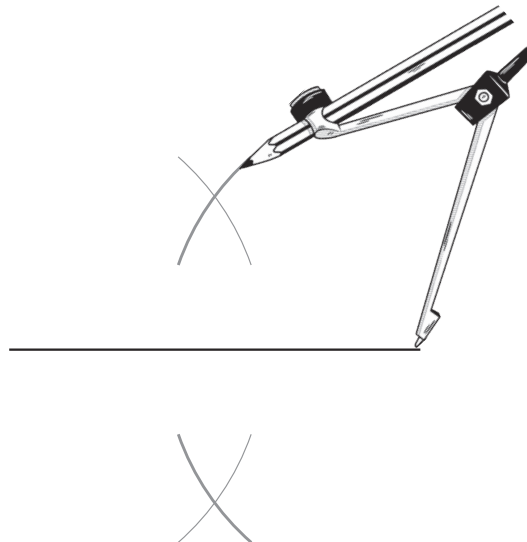
**Step 2:** Place the pair of compasses on one end of the line and set them to just over **half-way** of the line you have just drawn.



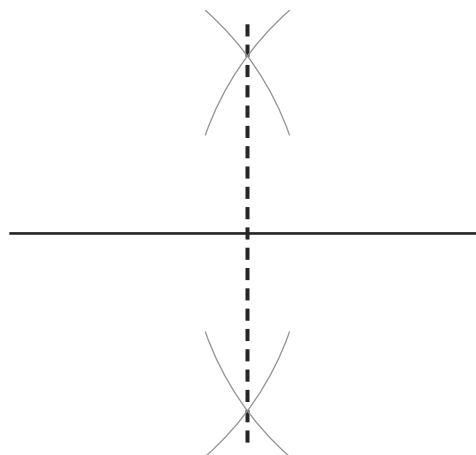
**Step 3:** Keeping the compasses on the end of the line, construct an arc above the line and below the line.



**Step 4:** Keeping your compasses at the same width, place them on the other end of the line and construct arcs above and below the line, like before. The arcs should now **intersect** (cross).



**Step 5:** Connect the intersections with a straight line, using a ruler.




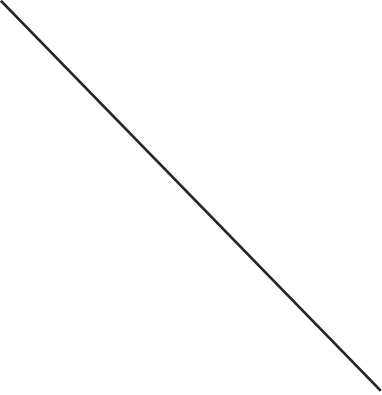


This line is the **perpendicular bisector** and contains all the points **equidistant** to the two end points of the line segment.

**NEVER** erase your construction lines!

**Your Turn**

1. Construct the perpendicular bisectors of the following lines:

<p>a.</p> 	<p>c.</p> 
<p>b.</p> 	<p>d.</p> 



2. Draw the perpendicular bisector of the points AB, CD and EF.

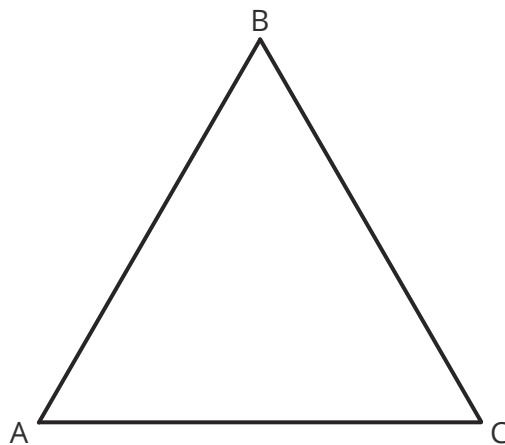


3. Draw a 10cm line and construct its perpendicular bisector.

4. Draw a 6cm line and construct its perpendicular bisector.

5. Draw a 7.5cm line and construct its perpendicular bisector.

6. Construct the perpendicular bisector of the line AB in the following shape.



**Challenge**

Use your compasses and ruler to construct an equilateral triangle of side length 8cm and then construct the perpendicular bisector of each side.