

**10.6 Special right triangles****HSG.SRT.C.8**

1. Isosceles right  $\triangle ABC$  is shown with legs  $AC = BC = 10$  as marked.

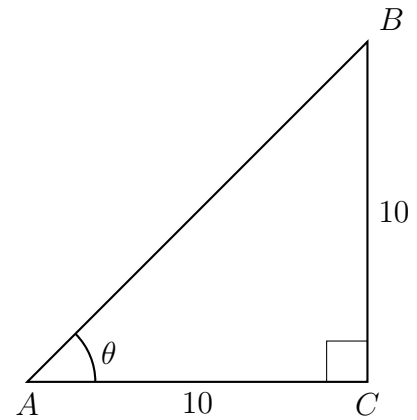
(a) Write down  $\theta$ .

(b) Find the length of hypotenuse  $AB$ .

(c) Write down  $\tan A =$

(d) Find  $\cos A =$

(e) Find  $\sin A =$



2. Given right triangle  $\triangle ABC$  with base  $AC = 1$  and hypotenuse  $AB = 2$  as marked.

(a) Find the altitude  $BC = h$ .

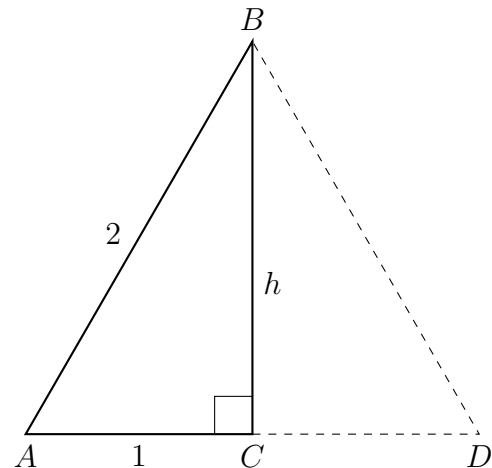
(b)  $\triangle ABC$  is reflected across  $\overline{BC}$ . Mark the lengths of the sides of its image  $\triangle DBC$

(c) Write down the angle measure of  $\angle A$ .

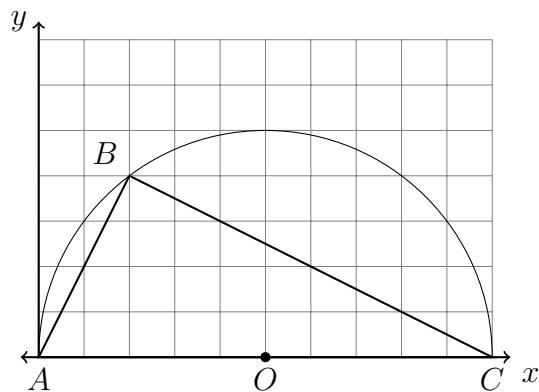
(d) Write down the angle measure of  $\angle ABC$ .

(e) Write down  $\cos A$ .

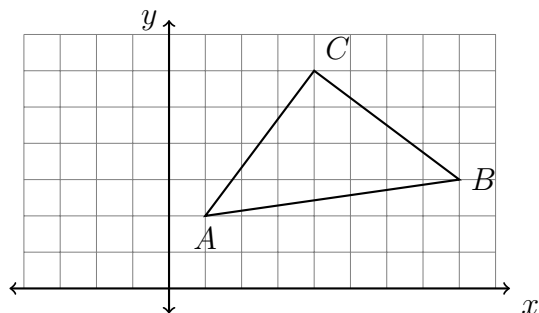
(f) Write down  $\sin A$ .



3. In the diagram below,  $\triangle ABC$  is inscribed in circle  $O$ . Show that  $\overline{AB} \perp \overline{BC}$ .



4. In the diagram below,  $\triangle ABC$  has vertices with coordinates  $A(1, 2)$ ,  $B(8, 3)$  and  $C(4, 6)$ .



Find the length of each side of  $\triangle ABC$ , showing that it is isosceles and not equilateral.

$$AC = \sqrt{(x_C - x_A)^2 + (y_C - y_A)^2} \quad \left| \quad BC = \sqrt{(x_C - x_B)^2 + (y_C - y_B)^2} \quad \right| \quad AB = \sqrt{(x_B - x_A)^2 + (y_B - y_A)^2}$$