

Name:

12.6 Special right triangles

HSG.SRT.C.8

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

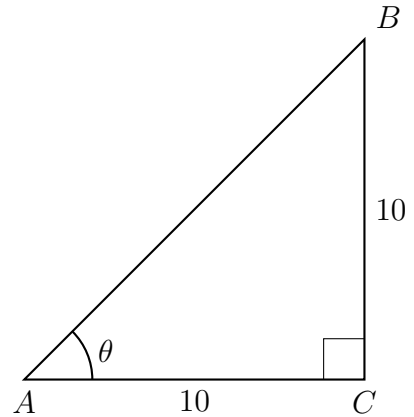
(a) Write down θ .

(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 $BC = h$.

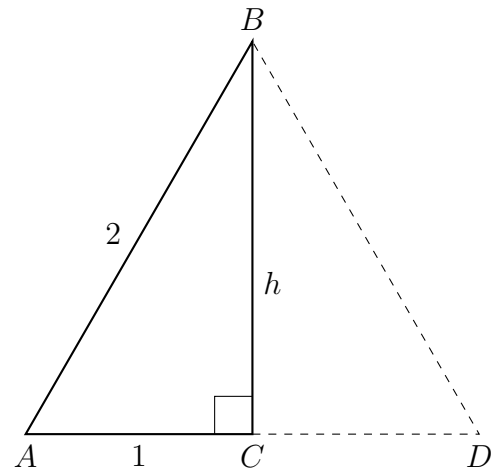
(b) $\triangle ABC$ is reflected across \overline{BC} . Mark the lengths of the sides of its image $\triangle DBC$

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

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

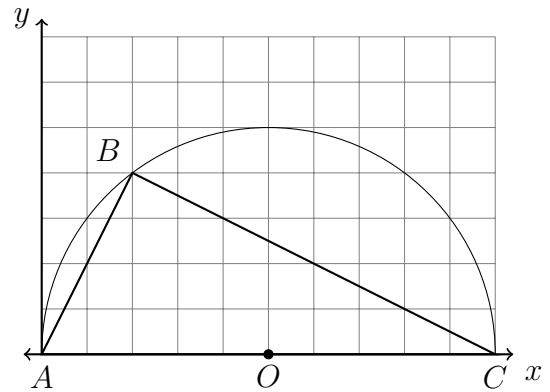
(e) Write down $\cos A$.

(f) Write down $\sin A$.

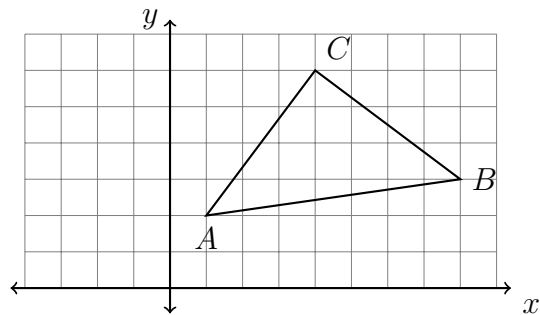


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3. In the diagram below, $\triangle ABC$ is inscribed in circle O . Show that $\overline{AB} \perp \overline{BC}$.



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.

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