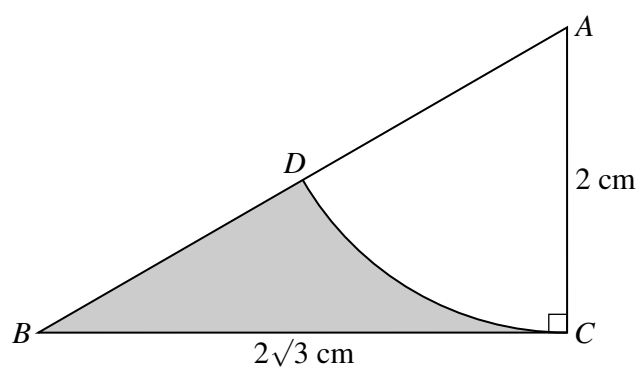


4



In the diagram,  $D$  lies on the side  $AB$  of triangle  $ABC$  and  $CD$  is an arc of a circle with centre  $A$  and radius  $2$  cm. The line  $BC$  is of length  $2\sqrt{3}$  cm and is perpendicular to  $AC$ . Find the area of the shaded region  $BDC$ , giving your answer in terms of  $\pi$  and  $\sqrt{3}$ . [4]