



The diagram shows a metal plate  $ABCDEF$  which has been made by removing the two shaded regions from a circle of radius  $10\text{ cm}$  and centre  $O$ . The parallel edges  $AB$  and  $ED$  are both of length  $12\text{ cm}$ .

- (i) Show that angle  $DOE$  is  $1.287$  radians, correct to 4 significant figures. [2]
- (ii) Find the perimeter of the metal plate. [3]
- (iii) Find the area of the metal plate. [3]