12	11f	The area of a sector of a circle of radius 6 cm is 50 cm^2. Find the length of the arc of the sector.	2

State Mean: **1.47/2**

$$\text{Area} = \frac{1}{2} r^2 \theta$$

$$50 = \frac{1}{2} \times 6^2 \times \theta$$

$$50 = 18\theta$$

$$\theta = \frac{25}{9}$$

Now, $\ell = r\theta$

$$= 6 \times \frac{25}{9}$$

$$= \frac{50}{3}$$

$\therefore$ length is $\frac{50}{3}$ cm

* These solutions have been provided by *projectmaths* and are not supplied or endorsed by the Board of Studies

Board of Studies: Notes from the Marking Centre

This part was well done and correctly set out by most candidates and a variety of solutions were presented. In some responses, candidates found the angle using a formula for the area and then applying the arc length formula. In other responses, candidates found the percentage of the area of the sector compared to that of the circle and applied this result to the circumference of the circle. Common errors included an inability to recall formulae, confusion between radians and degrees and substitution of the angle to find the arc length.

Source: **http://www.boardofstudies.nsw.edu.au/hsc_exams/**