19	$\pi \times 12^2 \times \frac{AOC}{360} (=100)$		4	M1	oe for setting up a correct expression for the area of the sector (or equation)
	$(AOC =) \frac{100 \times 360}{\pi \times 12^2} \left(= \frac{250}{\pi} \right)$			M1	for correctly rearranging for *AOC*
	(Angle *ABC* =) "79.57747" ÷ 2 (= 39.7887… or $\frac{125}{\pi}$)			M1	ft dep 1st M1 **and** '*x*' less than 360 for dividing their '*AOC*' by 2
		39.8		A1	for awrt 39.8 accept $\frac{125}{\pi}$
					Total 4 marks

20 (a)	$T = \frac{k}{m^2}$ or $Tm^2 = k$		3	M1	for a correct equation with a constant Do not allow constant = 1	
	$30 \times 0.5^2 = k$ or $30 = \frac{k}{0.5^2}$ or $k = 7.5$ or $k = \frac{15}{2}$			M1	dep on M1 for correct substitution in a correct equation	M2 for $k = 7.5$ or $k = \frac{15}{2}$
		$T = \frac{7.5}{m^2}$		A1	for $T = \frac{7.5}{m^2}$ or $T = \frac{15}{2m^2}$ SCB2 for $Tm^2 = 7.5$ or $Tm^2 = \frac{15}{2}$ or $m^2 = \frac{7.5}{T}$ or $m^2 = \frac{15}{2T}$	
(b)		750	1	B1	cao	
					Total 4 marks	