


Area of a sector

Give all sector areas in terms of π and to 2dp

	Circle	Area of circle (in terms of π)	Angle in minor sector (in degrees)	Area of minor sector	Angle in major sector (in degrees)	Area of major sector	Area of minor sector + Area of major sector = area of circle
Example	 D = 20cm	$A = \pi r^2$ $r = 10$ $A = \pi \times 10^2$ $A = \pi \times 100$ $A = 100\pi \text{ cm}^2$	40	$A = \frac{40}{360} \times 100\pi$ $A = \frac{4000}{360} \times \pi$ $A = \frac{100\pi}{9}$ $A = 34.91 \text{ cm}^2$	$360 - 40 = 320$	$A = \frac{320}{360} \times 100\pi$ $A = \frac{32000}{360} \times \pi$ $A = \frac{360}{9} \times \pi$ $A = \frac{800\pi}{9}$ $A = 279.25 \text{ cm}^2$	$\frac{100\pi}{9} + \frac{800\pi}{9} = \frac{900\pi}{9}$ $= 100\pi \checkmark$
1	D = 16cm	$A = \pi r^2$ $r = 8$ $A = 64\pi \text{ cm}^2$ $= 201.06$	50	$A = \frac{50}{360} \times 64\pi$ $A = \frac{80\pi}{9}$ $= 27.93$	$360 - 50 = 310$	$A = \frac{310}{360} \times 64\pi = \frac{496\pi}{9}$ $= 173.14$	$\frac{80\pi}{9} + \frac{496\pi}{9}$ $= \frac{576\pi}{9} = 64\pi \checkmark$
2	R = 30mm	$A = \pi r^2$ $r = 30$ $A = 900\pi \text{ mm}^2$ $= 2827.43$	120	$A = \frac{120}{360} \times 900\pi$ $A = 300\pi$ $= 942.48$	240	$A = \frac{240}{360} \times 900\pi = 600\pi$ $= 1884.96$	$300\pi + 600\pi$ $= 900\pi \checkmark$
3	R = 2m	$r = 2$ $A = 4\pi \text{ m}^2$ $= 12.57$	90	$A = \frac{90}{360} \times 4\pi = \pi$ $= 3.14$	270	$A = \frac{270}{360} \times 4\pi = 3\pi$ $= 9.42$	$\pi + 3\pi = 4\pi \checkmark$
4	D = 3 miles	$r = 1.5$ $A = \frac{9}{4}\pi \text{ square miles}$ $= 7.07$	160	$A = \frac{160}{360} \times \frac{9}{4}\pi = \pi$ $= 3.14$	200	$A = \frac{200}{360} \times \frac{9}{4}\pi = \frac{5}{4}\pi$ $= 3.93$	$\pi + \frac{5\pi}{4} = \frac{9\pi}{4} \checkmark$