



THE CIRCLE

AREA

Ref: G425. **3P1**

<p>A1 A circle has a radius of 23 mm. Calculate the area of the circle.</p>	<p>A2 A circle has a diameter of 21 cm. Calculate the area of the circle.</p>	<p>A3 A quadrant is cut from a circle of radius 14.5 cm. Calculate the area of the quadrant.</p>	<p>A4 A circle of diameter 67 mm is cut in half. Calculate the area of each of the semi-circles.</p>
<p>B1 A ten pence coin has a diameter of 24.5 mm. Work out the area of one face of the coin.</p>	<p>B2 A regulation dart board has a diameter of 451 mm. Work out the area of the dart board. Give your answer in cm^2.</p>	<p>B3 A circle has a circumference of 21 cm. Calculate the area of the circle.</p>	<p>B4 A circle has an area of 32 cm^2. Work out the length of the radius of the circle.</p>
<p>C1 A round dinner table has an area of 2.84 m^2. Work out the length of the circumference of the dinner table.</p>	<p>C2 A semi-circle has an area of 20 cm^2. Work out the perimeter of the semi-circle.</p>	<p>C3 Nathan eats a whole 12 inch pizza. Joshua eats half of a 10 inch pizza and half of a 14 inch pizza. Who eats the most pizza? Show clear working out.</p>	<p>C4 Penny is varnishing the floor of a circular room of diameter 5 metres. One tin of varnish will cover an area of 8 m^2. Work out the number of tins of varnish Penny needs to buy to varnish the whole floor of the room.</p>



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<p>A1 A circle has a radius of 23 mm. Calculate the area of the circle.</p> $A = \pi \times 23^2$ $= 1662 \text{ mm}^2$	<p>A2 A circle has a diameter of 21 cm. Calculate the area of the circle.</p> $A = \pi \times 10.5^2$ $= 346 \text{ cm}^2$	<p>A3 A quadrant is cut from a circle of radius 14.5 cm. Calculate the area of the quadrant.</p> $A = \frac{\pi \times 14.5^2}{4}$ $= 165 \text{ cm}^2$	<p>A4 A circle of diameter 67 mm is cut in half. Calculate the area of each of the semi-circles.</p> $A = \frac{\pi \times 33.5^2}{2}$ $= 1763 \text{ mm}^2$
<p>B1 A ten pence coin has a diameter of 24.5 mm. Work out the area of one face of the coin.</p> $A = \pi \times 12.25^2$ $= 471 \text{ mm}^2$	<p>B2 A regulation dart board has a diameter of 451 mm. Work out the area of the dart board. Give your answer in cm^2.</p> $A = \pi \times 22.55^2$ $= 1598 \text{ cm}^2$	<p>B3 A circle has a circumference of 21 cm. Calculate the area of the circle.</p> $D = \frac{21}{\pi}$ $= 6.6845$ $\Rightarrow r = 3.342\dots$ $A = \pi \times 3.342^2$ $= 35.1 \text{ cm}^2$	<p>B4 A circle has an area of 32 cm^2. Work out the length of the radius of the circle.</p> $\pi r^2 = 32$ $r = \sqrt{\frac{32}{\pi}}$ $= 3.19 \text{ cm}$
<p>C1 A round dinner table has an area of 2.84 m^2. Work out the length of the circumference of the dinner table.</p> $\pi r^2 = 2.84$ $r = \sqrt{\frac{2.84}{\pi}}$ $= 0.9507$ $C = 2 \times \pi \times 0.9507$ $= 5.97 \text{ m}^2$	<p>C2 A semi-circle has an area of 20 cm^2.</p> $\pi r^2 = 40$ <p>Perimeter of the semi-</p> $r = \sqrt{\frac{40}{\pi}}$ $= 3.568\dots$ $P = \pi \times 3.568 + 2 \times 3.568$ $= 18.3 \text{ cm}$	<p>C3 Nathan eats a whole 12 inch pizza. Joshua eats half of a 10 inch pizza and half of a 14 inch pizza. Who eats the most pizza?</p> $A = \pi \times 6^2$ $= 113 \text{ in}^2$ $A = \frac{\pi \times 5^2}{2} + \frac{\pi \times 7^2}{2}$ $= 116 \text{ in}^2$ <p>Joshua eats most</p>	<p>C4 Penny is varnishing the floor of a circular room of diameter 5 metres.</p> $A_{\text{FLOOR}} = \pi \times 2.5^2$ $= 19.634\dots$ $\text{Tins} = \frac{19.634\dots}{8}$ $= 2.45$ <p>(3 tins are needed)</p>