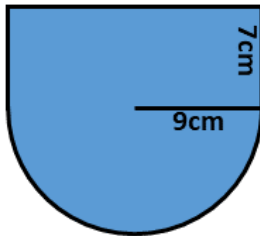




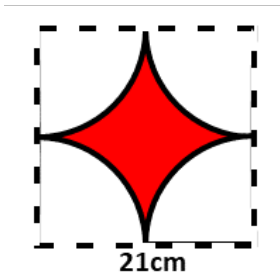
This is level 6; this level has mixed questions about the circle. Most of these questions will require a multi-part calculation once the situation described in the question has been understood. Give your answers correct to three [significant figures](#). You can earn a trophy if you get at least 7 correct. The diagrams are not drawn to scale.



1) What is the area of this composite shape made up of a rectangle and a semicircle? The radius of the semicircle is 9cm and the width of the rectangle is 7cm.

Working:

253 cm² ✓



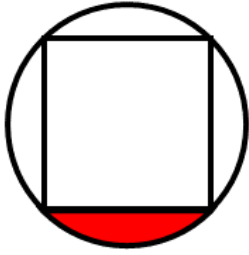
2) Find the area shaded in red which is what is left when four identical quarter circles are taken away from a square. The length of a side of the square is twice the length of the radius of a quarter circle.

94.815 cm² ✗



3) What is the circumference of this plate divided by its radius?

6.28 cm ✓



4) A square is inscribed in a circle of radius 9.1cm. Calculate the area shaded red.

23.6 cm² ✓

.....



5) The area of the circular base of this carton is half the area of the circular top. Find the diameter of the top if the diameter of the bottom is 5.6cm.

7.92 cm ✓

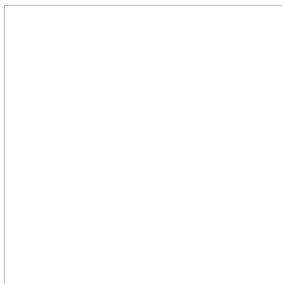
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6) The radius of a bicycle wheel is 38cm. It rotated 14262 times during a particular journey. How long was that journey? Give your answer in kilometres.

34.0 km ✓

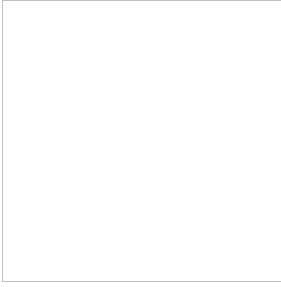
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7) A playground is in the shape of a square surrounded by four semi circles. At its widest it is 27 metres wide. What is the length of the perimeter of the playground?

84.8 m ✓

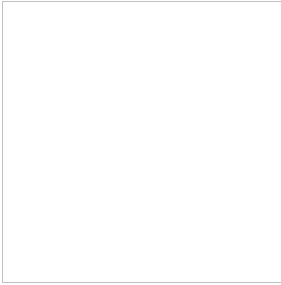
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8) A lawn is in the shape of a rectangle with a semicircle at either end. The width of the rectangle is 9.2m and the distance between the two semi circles (i.e., the length of the rectangle) is 4.7m. Find the area of the lawn.

110 m² ✓

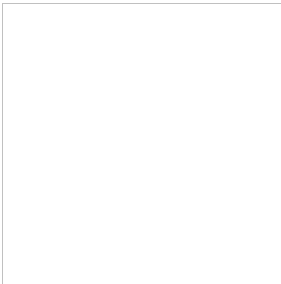
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9) The radius of a sector is 6.7cm and its area is 64cm². What is the angle between the two straight edges of the sector.

163 degrees ✓

.....



10) Can you calculate the area of this shape? Your clues are: minor radius: 2.4cm, major radius: 6.3cm and angle: 326°.

96.5 cm² ✓

.....