

Syllabus Focus: Objective 6Gg.02 — Parts of a Circle

Topic: Identifying and calculating Centre, Radius, Diameter, and Circumference

Time Allowed: 30 Minutes | **Total Marks:** 20 Marks

Section A: Identification & Definitions

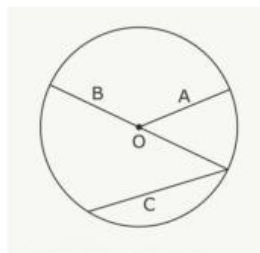
Question 1 [1 Mark]

Match each definition on the right to its correct circle term on the left.

- | | |
|-------|--|
| _____ | The total distance around the outer boundary of the circle |
| _____ | A line from the centre point to any point on the outer edge |
| _____ | A straight line passing through the centre connecting two opposite edges |

Question 2 (Misconception Check) [2 Marks]

Look at the circle below with labelled lines **A**, **B**, and **C**, and centre point **O**.



- (a) Write down the letter of the line that represents a true **radius**: Line _____ [1]
- (b) Write down the letter of the line that represents a true **diameter**: Line _____ [1]

Question 3 (TWM.04 Convincing) [2 Marks]

Mubaiwa claims: "Line C in Question 2 is a diameter because it connects two sides of the circle."

Explain why Mubaiwa is incorrect. State the rule a line must follow to be classified as a diameter.

Section B: Mathematical Relationships ($d = 2r$)

Question 4 [2 Marks]

Complete the missing values in the table using the relationship between radius (r) and diameter (d).

Circle	Radius (r)	Diameter (d)
Circle 1	6 cm	_____ cm
Circle 2	_____ cm	18 cm
Circle 3	4.5 cm	_____ cm
Circle 4	_____ cm	25 cm

Question 5 (TWM.03 Conjecturing) [2 Marks]

Anesu draws three different circles using a compass:

- **Circle A:** Radius = 5 cm
- **Circle B:** Radius = 10 cm
- **Circle C:** Radius = 15 cm

Anesu conjectures: "Every time I double the radius of a circle, its diameter doubles as well."

State whether Anesu's conjecture is **True** or **False**, and calculate the diameter of **Circle A** and **Circle B** to prove your answer.

Answer: _____ [1]

Diameter of Circle A: _____ cm | Diameter of Circle B: _____ cm [1]

Section C: Reasoning and Polygons vs. Circles

Question 6 [2 Marks]

Classify each statement as **True** or **False**.

(a) "A circle is a type of regular polygon because all points on the edge are equidistant from the centre."

Answer: _____ [1]

(b) "The radius of a circle is always exactly half the length of its diameter."

Answer: _____ [1]

Question 7 [2 Marks]

A large circular sports field has a measured diameter of 80 metres.

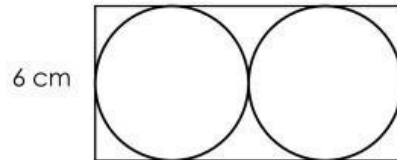
(a) A runner stands at the exact **centre** point of the field and runs in a straight line to the outer edge. What distance did the runner travel? [1]

Answer: _____ metres

(b) Another runner completes two full laps around the outer boundary of the field. Which part of the circle did this runner travel along? Circle one answer below: [1]

Section D: Applied Problem Solving**Question 8 (TWM.04 Convincing) [2 Marks]**

Two identical circular coins are placed side-by-side inside a tight rectangular box as shown below:



The height of the box is 6 cm.

(a) Calculate the **radius** of one coin. [1]

Answer: _____ cm

(b) Calculate the total **length** of the rectangular box. Show your reasoning. [1]

Answer: _____ cm

Question 9 [2 Marks]

A circular clock face has a minute hand that measures 12 cm from the central pivot to its tip.

(a) Which part of the circle does the length of the minute hand represent? [1]

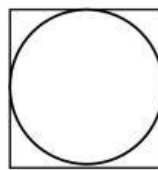
Answer: _____

(b) What is the total diameter of the clock face swept out by the tip of the minute hand? [1]

Answer: _____ cm

Question 10 [3 Marks]

A square tile has a side length of 14 cm. A circle is drawn inside the square so that it touches all four sides of the square.



(a) What is the **diameter** of the _____ inscribed circle? [1]

Answer: _____ cm

(b) What is the **radius** of the inscribed circle? [1]

Answer: _____ cm

(c) Explain how you know the exact length of the diameter without measuring it with a ruler. [1]