

Parts of a Circle — Radius, Diameter and Chord

Unit: Geometry - Student Practice Worksheet

Overview: The class wanted to know: is the radius of the classroom clock the same all the way round, or does it change? Kabir measured from the centre pin to three different points on the rim. All three came out exactly equal — and that turned out to be the whole definition.

Practice Questions (30 Total)

Section A - Easy

Q1. Teal spoke from the pin to the rim. Name?



- ☐ A. Radius
- ☐ B. Diameter
- ☐ C. Chord
- ☐ D. Circumference

Q2. The distance all the way around a circle's curved edge is the:

- ☐ A. Diameter
- ☐ B. Circumference
- ☐ C. Radius
- ☐ D. Chord

Q3. If the radius of a circle is 4 cm, what is the diameter?

- ☐ A. 2 cm
- ☐ B. 4 cm
- ☐ C. 8 cm
- ☐ D. 16 cm

Q4. Maroon line through the pin, rim to rim. Name?



- ☐ A. Radius
- ☐ B. Diameter
- ☐ C. Circumference
- ☐ D. Arc

Q5. Any straight line joining two points on a circle's edge is called a:

- ☐ A. Chord
- ☐ B. Radius
- ☐ C. Centre
- ☐ D. Circumference

Q6. If the diameter of a circle is 10 cm, what is the radius?

- ☐ A. 20 cm
- ☐ B. 10 cm
- ☐ C. 2.5 cm
- ☐ D. 5 cm

Q7. The maroon pin equally far from every rim point. Name?



- ☐ A. Radius
- ☐ B. Edge
- ☐ C. Centre
- ☐ D. Chord

Q8. Is a diameter also a chord?

- ☐ A. Yes, it's the longest possible chord
- ☐ B. No, they are completely unrelated
- ☐ C. Only in very large circles
- ☐ D. Only if the circle is a perfect square

Q9. If the radius is 7 cm, what is the diameter?

- ☐ A. 3.5 cm
- ☐ B. 7 cm
- ☐ C. 21 cm
- ☐ D. 14 cm

Q10. If the diameter is 20 cm, what is the radius?

- ☐ A. 40 cm
- ☐ B. 10 cm
- ☐ C. 20 cm
- ☐ D. 5 cm

Section B - Medium

Q11. Maroon diameter is 15 cm. Radius?



- ☐ A. 30 cm
- ☐ B. 7.5 cm
- ☐ C. 15 cm
- ☐ D. 3.75 cm

Q12. Kabir measured the string from the pin to the rim at three different spots and got the same length each time. What does this prove?

- ☐ A. Every point on the rim is the same distance from the centre
- ☐ B. The circle is not a true circle
- ☐ C. The string is stretchy
- ☐ D. The pin is not in the centre

Q13. A wheel has a radius of 25 cm. What is its diameter?

- ☐ A. 12.5 cm
- ☐ B. 25 cm
- ☐ C. 50 cm

- ☐ D. 100 cm

Q14. Teal chord misses the centre. Versus the diameter?



chord misses the pin

- ☐ A. Always longer than the diameter
- ☐ B. Always equal to the diameter
- ☐ C. Not comparable at all
- ☐ D. Always shorter than the diameter

Q15. Which of these is NOT a straight-line measurement of a circle?

- ☐ A. Circumference
- ☐ B. Radius
- ☐ C. Diameter
- ☐ D. Chord

Q16. A circle's diameter is 9 cm. What is its radius, as a decimal?

- ☐ A. 18 cm
- ☐ B. 3 cm
- ☐ C. 9 cm
- ☐ D. 4.5 cm

Q17. Two diameters crossing. Where do they meet?



two diameters

- ☐ A. Two diameters
- ☐ B. Two chords, always
- ☐ C. A chord and the circumference
- ☐ D. Two radii pointing the same direction

Q18. Two radii of the same circle are drawn. How do their lengths compare?

- ☐ A. One is always double the other

- ☐ B. They can never be measured
- ☐ C. Always exactly equal
- ☐ D. They are only equal in small circles

Q19. A coin has a diameter of 2.6 cm. What is its radius?

- ☐ A. 5.2 cm
- ☐ B. 1.3 cm
- ☐ C. 2.6 cm
- ☐ D. 0.65 cm

Q20. A circular table has a radius of 60 cm. A tablecloth needs to cover the full diameter with 10 cm extra on each side. What length must the cloth be?

- ☐ A. 120 cm
- ☐ B. 140 cm
- ☐ C. 130 cm
- ☐ D. 70 cm

Section C - Challenge

Q21. Rope laid straight through the pond centre. Length?



across a 3.5 m radius pond

- ☐ A. 7 m
- ☐ B. 3.5 m
- ☐ C. 10.5 m
- ☐ D. 1.75 m

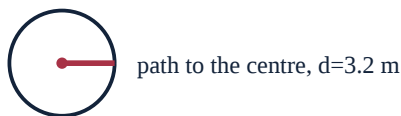
Q22. Kabir draws a chord that is exactly as long as the radius. Can that chord also be the diameter?

- ☐ A. Yes, that always works out
- ☐ B. Only in a very small circle
- ☐ C. Only if the chord is curved
- ☐ D. No — diameter is always twice the radius

Q23. Two circles have radii 4 cm and 6 cm. How much bigger is the second circle's diameter than the first's?

- ☐ A. 2 cm
- ☐ B. 4 cm
- ☐ C. 6 cm
- ☐ D. 10 cm

Q24. Path from rim to centre, diameter 3.2 m. Length?



- ☐ A. 6.4 m
- ☐ B. 3.2 m
- ☐ C. 1.6 m
- ☐ D. 0.8 m

Q25. Which statement is FALSE?

- ☐ A. All radii of one circle are equal in length
- ☐ B. The diameter always passes through the centre
- ☐ C. Every chord passes through the centre
- ☐ D. The diameter is the longest possible chord

Q26. A wheel's radius is 21 cm. If you laid three of its diameters end to end, what total length would that be?

- ☐ A. 126 cm
- ☐ B. 63 cm
- ☐ C. 84 cm
- ☐ D. 42 cm

Q27. Run across through the centre and back. Radius 70 m. Distance?



- ☐ A. 70 m

- ☐ B. 140 m
- ☐ C. 210 m
- ☐ D. 280 m

Q28. If you know a circle's circumference but not its radius, can you still find the diameter directly from the definitions in this lesson?

- ☐ A. No — this lesson's diameter–radius relationship needs the radius, not the circumference
- ☐ B. Yes, using $\text{diameter} = 2 \times \text{radius}$ alone
- ☐ C. Yes, they are always the same number
- ☐ D. No, circles without a centre have no diameter

Q29. A circular table's radius increases by 5 cm after adding a rim. If the original radius was 45 cm, what is the new diameter?

- ☐ A. 90 cm
- ☐ B. 100 cm
- ☐ C. 95 cm
- ☐ D. 50 cm

Q30. Ms. Rao's class drew a chord NOT through the centre and measured it as 6 cm, while the true diameter was 10 cm. What does this confirm?

- ☐ A. That chord could still be a diameter
- ☐ B. The diameter is the longest possible chord, and this chord is shorter
- ☐ C. The circle was not a true circle
- ☐ D. The radius must be 6 cm

Answer Key

Q1: (A) (a) Radius.

Q2: (B) (b) Circumference.

Q3: (C) (c) 8 cm. Diameter = $2 \times$ radius.

Q4: (B) (b) Diameter.

Q5: (A) (a) Chord.

Q6: (D) (d) 5 cm. Radius = diameter $\div$ 2.

Q7: (C) (c) Centre.

Q8: (A) (a) Yes — a diameter is a chord that happens to pass through the centre, making it the longest one.

Q9: (D) (d) 14 cm. Diameter = $2 \times$ radius.

Q10: (B) (b) 10 cm. Radius = diameter $\div$ 2.

Q11: (B) (b) 7.5 cm. Radius = diameter $\div$ 2.

Q12: (A) (a) A circle is defined by every rim point being equally distant from the centre — that fixed distance is the radius.

Q13: (C) (c) 50 cm. Diameter = $2 \times$ radius.

Q14: (D) (d) Always shorter — the diameter is the longest possible chord because it passes through the centre.

Q15: (A) (a) Circumference — it follows the curved edge, not a straight line.

Q16: (D) (d) 4.5 cm. $9 \div 2 = 4.5$.

Q17: (A) (a) Two diameters — since every diameter passes through the centre, any two of them must cross there.

Q18: (C) (c) Always exactly equal — every radius of the same circle has the same fixed length.

Q19: (B) (b) 1.3 cm. $2.6 \div 2 = 1.3$.

Q20: (B) (b) 140 cm. Diameter = 120 cm, plus 10 cm on each side = $120 + 10 + 10 = 140$.

Q21: (A) (a) 7 m. Diameter = $2 \times 3.5 = 7$ m.

Q22: (D) (d) No. Since diameter = $2 \times$ radius, a chord equal in length to the radius can never be the diameter.

Q23: (B) (b) 4 cm. Diameters are 8 cm and 12 cm; $12 - 8 = 4$.

Q24: (C) (c) 1.6 m. Radius = $3.2 \div 2 = 1.6$.

Q25: (C) (c) False — only the diameter (a special chord) passes through the centre; most chords do not.

Q26: (A) (a) 126 cm. Diameter = 42 cm; $3 \times 42 = 126$.

Q27: (D) (d) 280 m. One crossing (diameter) is 140 m; there and back is $2 \times 140 = 280$.

Q28: (A) (a) No — with only circumference and no radius given, the diameter = $2 \times$ radius rule alone can't be applied yet.

Q29: (B) (b) 100 cm. New radius = 50 cm, so new diameter = 100 cm.

Q30: (B) (b) Confirms the diameter is the longest possible chord — this off-centre chord measured shorter, as expected.

You've got this! Keep learning and shining! - Ruchi Math Coaching