10 Chapter Review

Chapter 10 Review

Key Words

Unscramble the letters for each puzzle in #1 to #4. Use the clues to help you solve the puzzles.

1. I R U S D A

the distance from the centre to any point on the circle

2. I S C B D E I N R E A G L N

an angle formed by two chords that share a common endpoint

3. R O C H D

a line segment that has both endpoints on the same circle

4. C R P P D E E N L A U R I S I T C R O B E

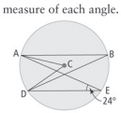
a line or line segment that passes through the midpoint of a line segment at 90°

10.1 Exploring Angles in a Circle, pages 378–385

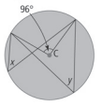
5. Determine the measure of each angle.

a) ∠ABD

b) ∠ACD



6. What are the measures of unknown angles x and y?

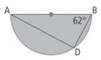


7. Parmjeet explains that if an inscribed angle in a circle has a measure of 13.5°, the central angle subtended by the same arc will also measure 13.5°. Do you agree with her thinking? Why or why not?

8. What is the measure of each central angle on the dartboard?

9. What is the measure of ∠EFG?

10. What is the measure of ∠BAD in the semicircle?

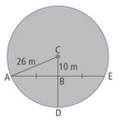


10.2 Exploring Chord Properties, pages 386–393

11. Explain how you know that the line l must pass through the centre of the circle.

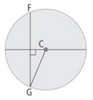
12. Andrea tries to find the centre of a wooden table top by placing a string across the top and finding its midpoint. She misses the centre by 1 cm. What went wrong? How might she have found the centre more accurately?

13. What is the length of chord AE? Explain how you determined your answer.



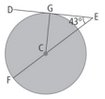
14. Archaeologists have found a broken piece of a wagon wheel as shown. Show how they can determine the circumference of the entire wheel from this broken piece.

15. If chord FG has a length of 18 cm and the diameter of the circle is 22 cm, what is the shortest distance between FG and the centre of the circle? Express your answer to the nearest tenth of a centimetre.

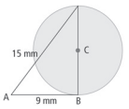


10.3 Tangents to a Circle, pages 394–403

16. What is the measure of ∠FCG if DE is tangent to the circle?



17. If AB is tangent to the circle at B, what is the length of the radius?



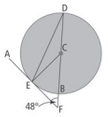
18. Jasmine was flying a remote-control airplane in a circle with a radius of 50 m. The signal was lost by the airplane which then flew along a tangent from the circle until it crashed 140 m from Jasmine's location. How far did the airplane travel horizontally along the tangent? Include a diagram in your answer. Calculate the distance to the nearest metre.

19. Line segment AF is tangent to the circle at E, and ∠AFD = 48°. Find the measure of each angle. Justify your answers.

a) ∠CEF **b)** ∠ECF

c) ∠ECD **d)** ∠DEC

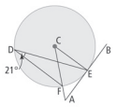
e) ∠AED **f)** ∠EDB



20. Line segment AB is tangent to the circle at E. Determine the measure of the requested angles.

a) ∠ACE

b) ∠CAB



***MathLinks 9*, pages 404–405**

Suggested Timing

40–50 minutes

Materials

- compass
- protractor
- ruler
- tracing paper

Blackline Masters

BLM 10–5 Section 10.1 Extra Practice
BLM 10–7 Section 10.2 Extra Practice
BLM 10–10 Section 10.3 Extra Practice

Planning Notes

Allow students to work independently. If students encounter difficulties, provide an opportunity for them to discuss strategies with others. They might also refer to their Foldable for the chapter, their worked exercises for the section, or the modelled examples in the appropriate section of the student resource. For the few questions that do not have a diagram, encourage students to construct a diagram to help with their visualization of the problem. For questions with diagrams, remind students to copy the diagram in their notebook in order for students to label angles and dimensions as they are determined.

Meeting Student Needs

- Encourage students to use their chapter Foldable and to add new notes if they wish.
- You may wish to reactivate student knowledge about the number of degrees in a circle.
- Some students might benefit from sketching the circle diagrams and labelling what they know before answering questions.
- Students who require more practice on a particular topic may refer to **BLM 10–5 Section 10.1 Extra Practice**, **BLM 10–7 Section 10.2 Extra Practice**, and **BLM 10–10 Section 10.3 Extra Practice**.

Gifted and Enrichment

- Some students may already be familiar with the skills handled in this review. To provide enrichment and extra challenge for gifted students, go to www.mathlinks9.ca and follow the links.

Assessment	Supporting Learning
Assessment *for* Learning	
Chapter 10 Review The Chapter 10 Review is an opportunity for students to assess themselves by completing selected questions in each section and checking their answers against the answers in the back of the student resource.	• Have students check the contents of the What I Need to Work On section of their Foldable and do at least one question related to each listed item. • Have students revisit any section that they are having difficulty with prior to working on the chapter test. • Have students review their notes from their Foldable, Math Learning Log, and web. • Encourage students to make use of any tools or constructions that would assist them.