10 Practice Test

Chapter 10 Practice Test

For #1 and #2, choose the best answer.

1. Which statement is true?

A A central angle is smaller than an inscribed angle subtended by the same arc.

B Two inscribed angles are never equal in size.

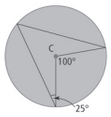
C An inscribed angle subtended by a diameter of the circle is always 90°.

D An inscribed angle in a semicircle can be larger than 90°.

2. What is the measure of the inscribed angle?

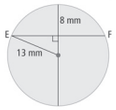
A 25° **B** 50°

C 100° **D** 200°

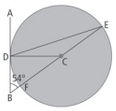


Complete the statements in #3 and #4.

3. The length of EF is ■.

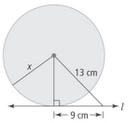


4. If AB is tangent to the circle, the measure of ∠BCD is ■.

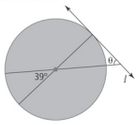


Short Answer

5. What is the length of radius x? Express your answer to the nearest tenth of a centimetre.

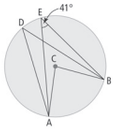


6. Find the measure of angle θ. Line l is tangent to the circle.

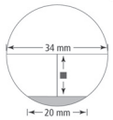


Extended Response

7. What are the measures of ∠ADB and ∠ACB? Explain your reasoning.

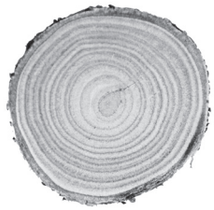


8. The diagram represents the water level in a pipe. The surface of the water from one side of the pipe to the other measures 20 mm, and the inner diameter of the pipe is 34 mm. What is the shortest distance from the centre of the pipe to the water level, rounded to the nearest millimetre? Explain your reasoning.



9. The Namdaemun gate, a two-storey, pagoda-style wooden building on a stone base, was Korea's premier national treasure. This 600-year-old structure in Seoul was destroyed in a fire in 2008.

To rebuild the gate, square beams were cut from logs. What is the largest dimension of square that can be cut from a log with a diameter of 40 cm?



Math Link: Wrap It Up!

Design a piece of art or a logo using at least two circles.

- Incorporate each circle property that you have studied into your design, and label where you use these properties.
- You may wish to use some or all of the designs that you created in the Math Link revisits throughout the chapter.

***MathLinks 9*, pages 406–407**

Suggested Timing
30–40 minutes

Materials
- compass
- protractor
- ruler

Blackline Masters
BLM 10–12 Circles Template
BLM 10–13 Chapter 10 Test

Planning Notes

Have students start the practice test by writing the question numbers in their notebooks. Have them indicate which questions they need a little help with, a lot of help with, or no help with. Have students first complete the questions they know they can do. Then, have them complete the questions they know something about. Finally, have students do their best on the questions that they are still struggling with.

It may be beneficial for some students to use **BLM 10–12 Circles Template** to redraw and add angle measures and dimensions as they are calculated.

This practice test can be assigned as an in-class or take-home assignment. Provide students with the number of questions they can comfortably do in one class. These are the minimum questions that will meet the related curriculum outcomes: #1–6.

Study Guide

Question(s)	Section(s)	Refer to	The student can …
#1	10.1	Example 2	✓ describe the relationship between inscribed angles in a circle
#2	10.1	Example 1	✓ describe the relationship between inscribed angles in a circle
#3	10.2	Example 1	✓ describe the relationship between chords and radii of circles
#4, 6, 7	10.3	Example 1	✓ relate tangent lines (lines that touch a circle at one point) to the radius of the circle
#5	10.3	Example 3	✓ relate tangent lines (lines that touch a circle at one point) to the radius of the circle
#8, 9	10.2	Example 2	✓ describe the relationship between chords and radii of circles

Answers

Chapter 10 Practice Test

1. C

2. B

3. 24 mm

4. 36°

5. 9.4 cm

6. 51°

7. ∠ADB = 41°
Example: ∠ADB and ∠AEB are inscribed angles that subtend the same arc, and are therefore congruent. ∠ACB = 82°. ∠ACB is a central angle that subtends the same arc as inscribed angle ∠AEB which is 42°. Therefore, the measure of ∠ACB is twice the measure of ∠AEB.

8. 14 mm
Example: If a radius is drawn to one of the endpoints of the 20 mm chord, a right triangle is formed. By using the Pythagorean relationship, d represents the shortest distance,

$$10^2 + d^2 = 172$$
$$100 + d^2 = 289$$
$$d^2 = 189$$
$$d = \sqrt{189}$$
$$d \approx 14$$

9. 28.28 cm by 28.28 cm

Assessment	Supporting Learning
Assessment *as* Learning	
Chapter 10 Self-Assessment Have students review their earlier responses in the What I Need to Work On section of their Foldable.	• Have students use their responses on the practice test and work they completed earlier in the chapter to identify areas in which they may need to reinforce their understanding of skills or concepts. Before the chapter test, coach them in the areas in which they are having difficulties.
Assessment *for* Learning	
Chapter 10 Test After students complete the practice test, you may wish to use **BLM 10–13 Chapter 10 Test** as a summative assessment.	• Consider allowing students to use their Foldable and web. • Since the Math Link: Wrap It Up! and Challenges provide additional reinforcement of chapter content, you may wish to have students complete these activities before doing the Chapter 10 Practice Test and **BLM 10-13 Chapter 10 Test**. • Consider using the Challenge on page 408–409 to assess the knowledge and skills of students who have difficulty with tests.