

10.1 Exploring Angles in a Circle

MathLinks 9, pages 378–385

Key Ideas Review

1. Choose from the following terms to complete each sentence.

arc

inscribed angle

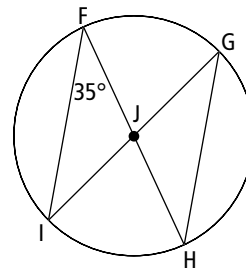
subtended

- a) Inscribed angles are equal when subtended by the same _____.
- b) When subtended by the same arc, a central angle is twice the measure of a(n) _____.
- c) An inscribed angle is equal to 90° when _____ by the diameter of the circle.

Check Your Understanding

2. a) On a sheet of paper or inside the back cover of this Practice and Homework Book, use a compass to draw a circle 10 cm across.
- b) Create two radius lines (radii) and mark the central angle these radii create. Measure the central angle. Label the angle measurement.
- c) Mark two chords that share one endpoint on the circle. With a protractor, measure the inscribed angle this creates. Label the angle measurement.
- d) Use a coloured pencil or pen to mark the portions of the circle that form the arc(s) across the endpoints of your central and inscribed angles.

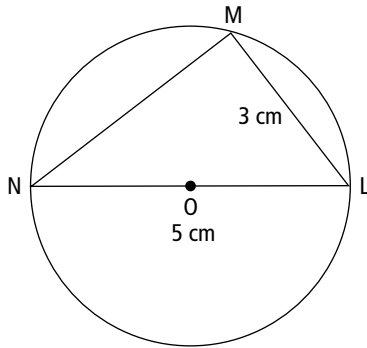
3.



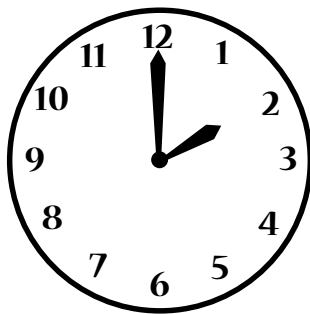
- a) What is the measure of $\angle FHG$? Explain your reasoning.
- b) What kind of angle is $\angle FJG$? How do you know?

- c) What is the measure of $\angle FJG$?
Explain your reasoning.

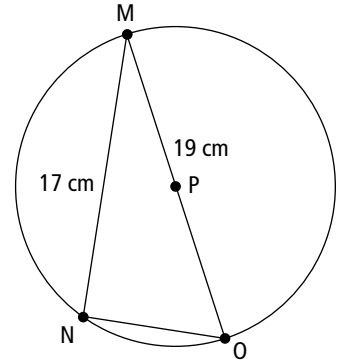
4. Point O is the centre of this circle.
diameter LN = 5 cm
chord LM = 3 cm



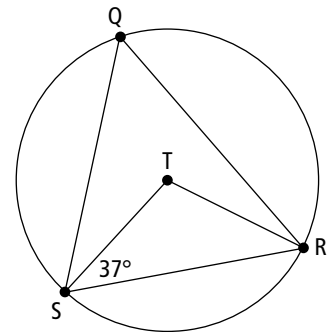
- a) What is the measure of angle $\angle LMN$?
b) How long is chord NM?
5. a) Label the measure of the angle between the hands of this clock.
b) The angle made by the hands is bisected. The bisector is drawn so that it extends across the diameter of the clock. What numbers does the bisector touch on the clock?



6. Point P is the centre of the circle.
diameter MO = 19 cm
chord MN = 17 cm



- a) How long is the radius?
b) What is the measure of $\angle MNO$?
c) What is the length of chord NO, to the nearest tenth?
7. Point T is at the centre of this circle.
 $\angle TSR = 37^\circ$. Justify your answer to each of the following questions.



- a) What is the measure of $\angle RTS$?
b) What is the measure of $\angle RQS$?