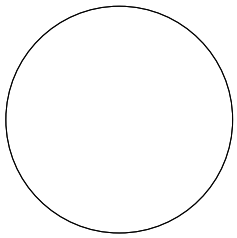
Date: _____

10.2 Exploring Chord Properties

***MathLinks 9,* pages 386–393**

Key Ideas Review

1. Draw the following features on this circle.



a) two chords, BD and EF

b) the perpendicular bisector of each chord

c) the centre of the circle

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

bisector(s)	centre	chord(s)

a) The _____ of a circle can be found where the perpendicular _____ of two _____ meet.

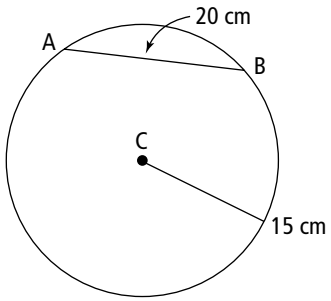
b) A _____ is perpendicular to a _____ if it passes through the circle's _____.

c) A line through the _____ of a circle that intersects a chord at right angles is a _____ of the _____.

d) The shortest path between the _____ of a circle and a _____ is the perpendicular _____ of the chord.

Check Your Understanding

3. The radius of this circle is 15 cm. The chord is 20 cm long.



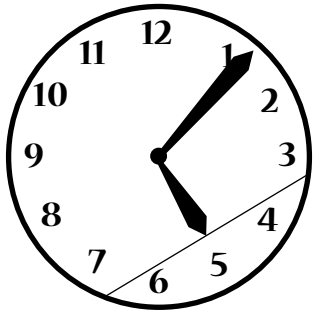
a) Draw the perpendicular bisector of the chord.

b) How long is the bisector from the centre to the chord, to the nearest tenth?

Date: _____

4. An archer wants to draw a target in the centre of a 60-cm circle for bow-and-arrow practice. Draw and label a diagram to show him how to find the centre.

5. This clock face has a diameter of 40 cm. The chord shown is 28 cm long.

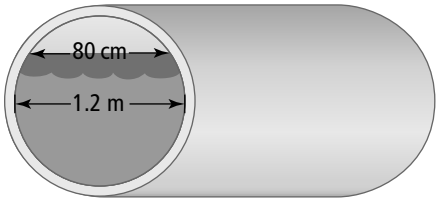


a) How long is the hour hand, to the nearest hundredth?

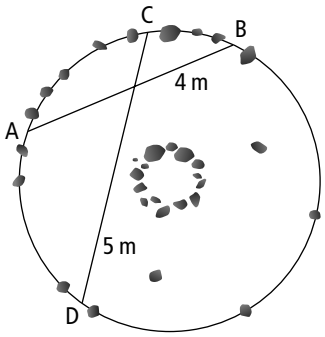
b) How far is it from the midpoint of the chord to the outside of the clock face?

c) Estimate the height of the number 5. Show your thinking.

6. When an engineer inspects a pipeline, she notices a high water mark. How much space is there between the high water level and the top of the pipe, to the nearest hundredth?



7. An archaeologist has found the border of a tipi ring. Some of the stones have been moved.



a) Explain or show how four ropes can be used to find the centre of the circle.

b) What is the diameter of the tipi ring, to the nearest tenth of a metre?