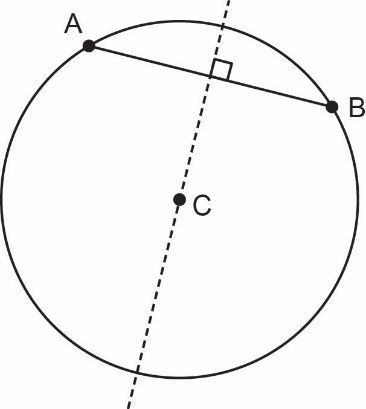
Investigating Circle Properties   
 and Constructions

**Geometry**

**Unit 1 Line Master 5a**

**Exploring Chords in a Circle**

* Use a compass to construct a circle on paper or tracing paper. Label the centre C.
* Construct chord that is not a diameter.
* Fold the circle so that point A coincides with point B.
* What do you notice about the fold?



**Application**

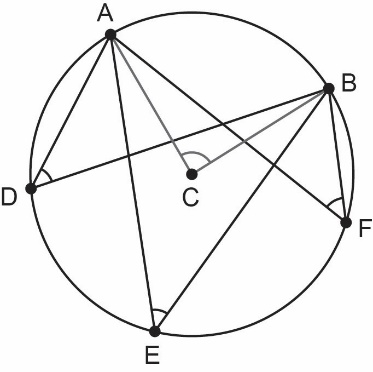
|  |  |
| --- | --- |
| a) The radius of this circle is 9.  The length of chord is 12.  How far is the chord from the centre  of the circle?  (i.e., What is the length of ?)  (Answer to the nearest tenth) | b) The radius of this circle is 6.  The length of is 3.  What is the length of chord ?  (Answer to the nearest tenth) |

Investigating Circle Properties   
 and Constructions (cont’d)

**Geometry**

**Unit 1 Line Master 5b**

**Exploring Angles and Arcs**

* Use a compass to construct a circle. Label the centre C.
* Place points A and B on the circle to create minor arc .
* Add points D, E, and F on the circle (not between the minor arc AB) and join segments   
  to create inscribed angles , , and .
* Use a protractor to measure these angles. What do you notice?
* Construct and measure central angle . What do you notice?

**Application**

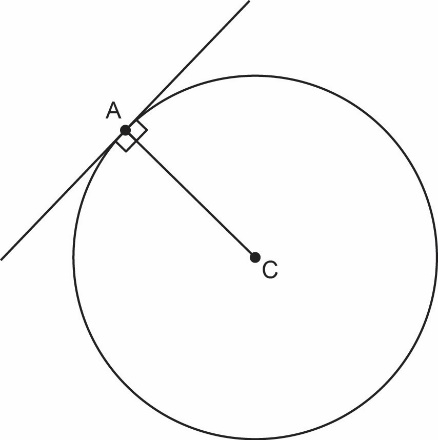
|  |  |
| --- | --- |
| a) Point C is the centre of the circle.  Determine the measure of . | b) Point C is the centre of the circle.  Determine the measure of |

Investigating Circle Properties   
 and Constructions (cont’d)

**Geometry**

**Unit 1 Line Master 5c**

**Exploring Tangents to a Circle**

* Use a compass to construct a circle. Label the centre C.
* Construct a radius .
* Use a protractor to construct 90° angles on both sides of the radius at point A,   
  and extend the line.
* What do you notice about the line in relation to the circle?

**Application**

|  |  |
| --- | --- |
| a) is tangent to the circle at Point A.  The radius of the circle is 12,  and AB = 16.  What is the length of ? | b) is tangent to the circle at Point A.  The radius of the circle is 3.  If BC = 4.5 and DC = 3.5,  what is the length of ?  (Answer to the nearest tenth) |