

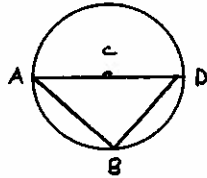
**Math 9: Circle Geometry**

• **Exploring Angles in a Circle**

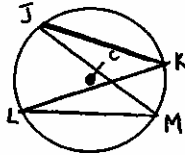
- a. What are the measure of  $\angle ADB$  and  $\angle AEB$ ?



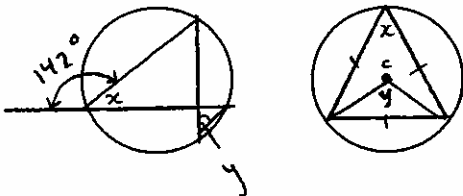
- b. Point C is the centre of the circle. Diameter  $AD = 40$  cm chord  $BD = 36$  cm. What is the measure of  $\angle ABD$ ? What is the length of chord  $AB$ ?



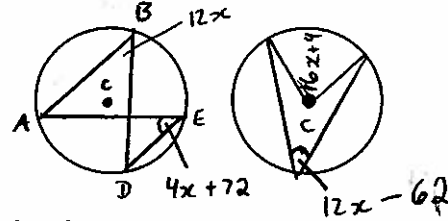
- c. One flashlight projects light through an angle of  $14^\circ$ . A second projects light through an angle of  $28^\circ$ . Use a diagram to show where the first flashlight could be placed so it illuminates the same area as the second.
- d. If  $\angle KJM = 18^\circ$ ,  $\angle JML = 26^\circ$  and point C is the centre of the circle, what is the measure of  $\angle KLM$ ,  $\angle JKL$ ,  $\angle JCL$ ,  $\angle KCM$ ?



- e. Find the unknown angle measures,  $x$  and  $y$  in each diagram. Where C is labeled, it is the centre of the circle.

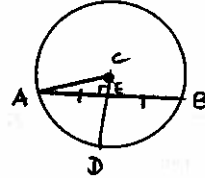


- f. For the following calculate the value of  $x$ .

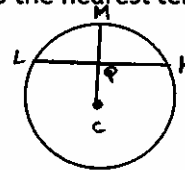


• **Chord Properties**

- a.  $CD$  bisects chord  $AB$ . The radius of the circle is 16 cm long. Chord  $AB$  measures 25 cm. What is the length of  $CE$ ?

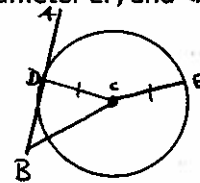


- b. The radius of the circle is 13.3 cm, the radius  $CM$  is perpendicular to the chord  $LK$ , and  $MQ$  measures 5.6 cm. What is the length of the chord  $LK$  to the nearest tenth?



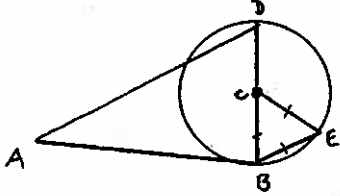
• **Tangents to a circle**

- a. In the diagram,  $AB$  is tangent to the circle at point  $D$ ,  $BE$  contains the diameter  $EF$ , and  $\angle ABE = 66^\circ$ .



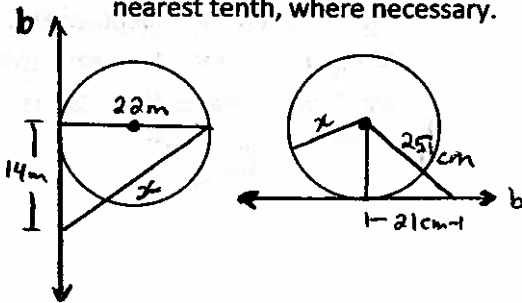
What is the measure of  $\angle BDC$ ? What is the measure of the central angle  $\angle DCE$ ? What type of triangle is  $\triangle CDE$ ? What is the measure of  $\angle DEC$ ?

- b. In the diagram,  $AB$  is tangent to the circle at point  $B$ .  $BD$  is a diameter of the circle,  $AB = 13$  cm,  $AD = 21$  cm, and  $\triangle BCE$  is an equilateral triangle.



What is the length of diameter  $BD$ ?  
 What is the length of chord  $BE$ ? What is the measure of the inscribed angle  $\angle BED$ ? What is the length of chord  $DE$ , to the nearest centimeter?

- c. Find the length of  $x$  in each diagram. Line  $b$  is tangent to the circle. Express your answer to the nearest tenth, where necessary.



### Questions to Review

Chapter 10 Get Ready

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Circle Geometry Assignment

Circle Geometry Test