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**Answers**

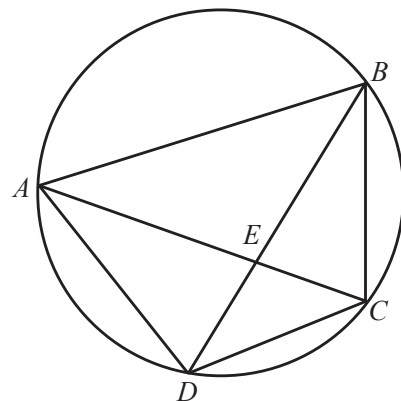
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## Practice 10

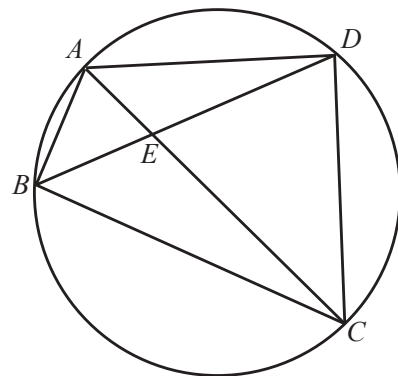
1. In the figure,  $AB$ ,  $BC$ ,  $CD$  and  $AD$  are chords of the circle.  $AC$  and  $BD$  intersect at  $E$ . It is given that  $BE = 6$  cm,  $CE = 3$  cm and  $AE = 8$  cm.

- (a) Write down a pair of similar triangles. Also find  $DE$ .  
 (b) Suppose that  $CD = 5$  cm. Are  $AC$  and  $BD$  perpendicular to each other? Explain your answer.

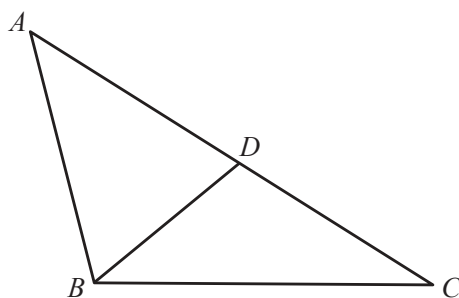


2. In the figure,  $AB$ ,  $BC$ ,  $CD$  and  $AD$  are chords of the circle.  $AC$  and  $BD$  intersect at  $E$ . It is given that  $BE = 3$  cm,  $DE = 7$  cm and  $AE = 2$  cm.

- (a) Write down a pair of similar triangles. Also find  $CE$ .  
 (b) Suppose that  $CD = 13$  cm. Are  $AC$  and  $BD$  perpendicular to each other? Explain your answer.



3. In the figure,  $D$  is a point lying on  $AC$  such that  $\angle BAC = \angle CBD$ .



- (a) Prove that  $\triangle ABC \sim \triangle BDC$ .  
 (b) Suppose that  $AB = 65$  cm,  $BC = 156$  cm and  $CD = 144$  cm. Is  $\triangle ABC$  a right-angled triangle? Explain your answer.





## Practice 21

1. The ages of the staff members of Company *A* are shown as follows:

18 19 20 20 20 26 26 29 29 29  
29 30 30 35 35 35 41 41 48 53

- (a) Write down the median and the mode of the ages of the staff members of Company *A*.  
(b) The stem-and-leaf diagram below shows the distribution of the ages of the staff members of Company *B*. It is given that the range of this distribution is 36 years old.

<u>Stem (tens)</u>	<u>Leaf (units)</u>
2	<i>a</i> 5 6
3	4 4 8 9
4	1 1 3
5	7 <i>b</i>

- (i) Find *a* and *b*.  
(ii) From each company, a staff member is randomly selected as the representative of that company. The two representatives can share their experiences when the difference of their ages exceeds 35. Find the probability that these two representatives can share their experiences.
2. The marks of a quiz (full mark is 50) of the students in Class *A* are shown as follows:

19 22 22 24 25 25 25 28 29 29  
31 33 33 33 33 38 41 42 48 50

- (a) Write down the median and the mode of the marks of the students in Class *A*.  
(b) The stem-and-leaf diagram below shows the distribution of the marks of the same quiz of the students in Class *B*. It is given that the range of this distribution is 27 marks.

<u>Stem (tens)</u>	<u>Leaf (units)</u>
2	<i>a</i> 3 6
3	2 4 7 9 9
4	5 8 8 <i>b</i>
5	0

- (i) Find *a* and *b*.