

## Circle Theorems

$C$  is the centre of the circle, all other points are on the circumference.  
All the angles are less than  $180^\circ$ .

$A\hat{D}B = 20^\circ$ What is $A\hat{C}B$ ?	$A\hat{B}C = 20^\circ$ What is $A\hat{C}B$ ?
$A\hat{C}B = 20^\circ$ What is $A\hat{B}C$ ?	$A\hat{B}C = 20^\circ$ What is $A\hat{D}B$ ?
$A\hat{D}B = 20^\circ$ What is $A\hat{B}C$ ?	$A\hat{D}B = 90^\circ$ What is $A\hat{E}B$ ?
$A\hat{D}B = 20^\circ$ What is $A\hat{E}B$ ? (2 answers)	$A\hat{C}B = 20^\circ$ What is $A\hat{D}B$ ? (2 answers)

## Circle Theorems

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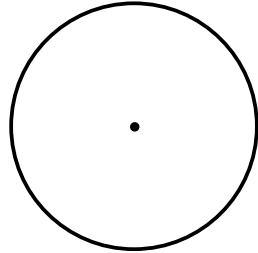
<b>Ratio</b>  $A\hat{D}B$ and $A\hat{E}B$ are in the ratio $2 : 7$ .  What is $A\hat{D}B$ ?	<b>Equations</b>  $A\hat{B}C$ is $10^\circ$ greater than $A\hat{D}B$ .  What is $A\hat{B}C$ ?
<b>Percentages</b>  $A\hat{B}C$ is 25% of the size of $A\hat{C}B$ .  What is $A\hat{B}C$ ?	<b>Averages</b>  The mean of $A\hat{C}B$ and $A\hat{D}B$ is $24^\circ$ .  What is $A\hat{D}B$ ?
<b>Sequences</b>  The angles of quadrilateral $ABDE$ form an arithmetic sequence. The smallest angle is $45^\circ$ . What is the second smallest angle?	<b>Bounds</b>  $A\hat{C}B$ is $30^\circ$ , to the nearest $10^\circ$ .  What is the range of possible values for $A\hat{D}B$ ?

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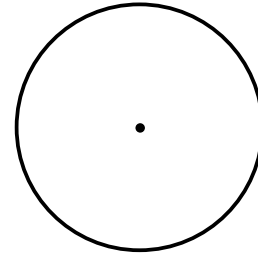
$$\widehat{ADB} = 20^\circ$$

What is  $\widehat{ACB}$ ?



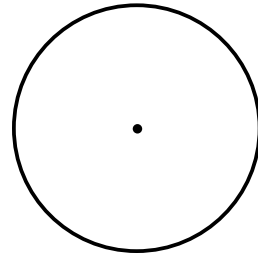
$$\widehat{ACB} = 20^\circ$$

What is  $\widehat{ABC}$ ?



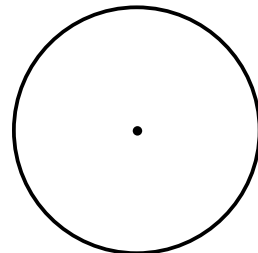
$$\widehat{ADB} = 20^\circ$$

What is  $\widehat{ABC}$ ?



$$\widehat{ADB} = 20^\circ$$

What is  $\widehat{AEB}$ ?  
(2 answers)

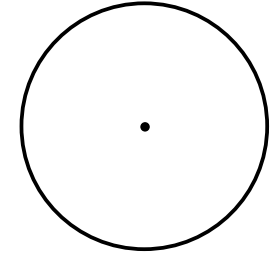


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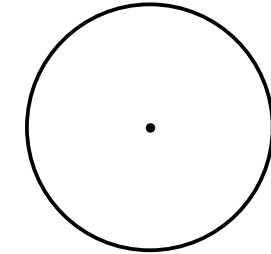
$$\widehat{ABC} = 20^\circ$$

What is  $\widehat{ACB}$ ?



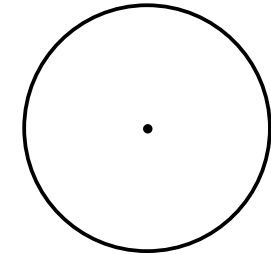
$$\widehat{ABC} = 20^\circ$$

What is  $\widehat{ADB}$ ?



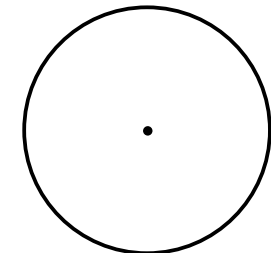
$$\widehat{ADB} = 90^\circ$$

What is  $\widehat{AEB}$ ?



$$\widehat{ACB} = 20^\circ$$

What is  $\widehat{ADB}$ ?  
(2 answers)



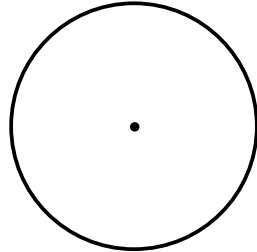
## Circle Theorems

$C$  is the centre of the circle, all other points are on the circumference.  
All the angles are less than  $180^\circ$ .

### Ratio

$\widehat{ADB}$  and  $\widehat{AEB}$  are  
in the ratio  $2 : 7$ .

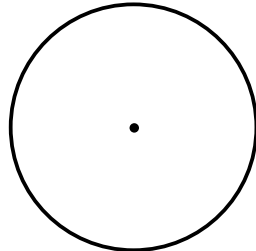
What is  $\widehat{ADB}$ ?



### Percentages

$\widehat{ABC}$  is 25% of the  
size of  $\widehat{ACB}$ .

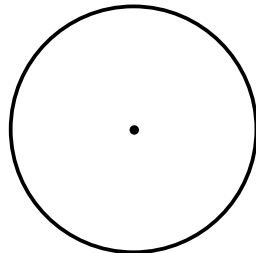
What is  $\widehat{ABC}$ ?



### Sequences

The angles of  
quadrilateral  $ABDE$  form  
an arithmetic sequence.  
The smallest angle is  $45^\circ$ .

What is the second  
smallest angle?



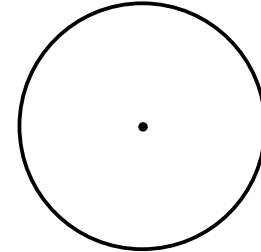
## Circle Theorems

$C$  is the centre of the circle, all other points are on the circumference.  
All the angles are less than  $180^\circ$ .

### Equations

$\widehat{ABC}$  is  $10^\circ$  greater  
than  $\widehat{ADB}$ .

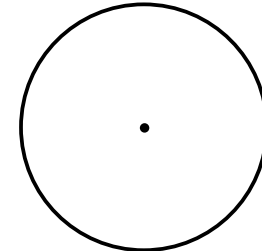
What is  $\widehat{ABC}$ ?



### Averages

The mean of  $\widehat{ACB}$   
and  $\widehat{ADB}$  is  $24^\circ$ .

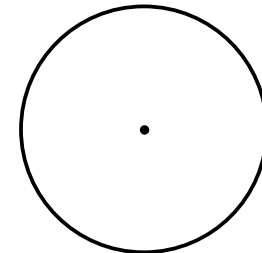
What is  $\widehat{ADB}$ ?



### Bounds

$\widehat{ACB}$  is  $30^\circ$ ,  
to the nearest  $10^\circ$ .

What is the range of  
possible values for  $\widehat{ADB}$ ?



### Circle Theorems

$C$  is the centre of the circle, all other points are on the circumference.  
All the angles are less than  $180^\circ$ .

$$\widehat{ADB} = 20^\circ$$

What is  $\widehat{ACB}$ ?

$$40^\circ$$

$$\widehat{ACB} = 20^\circ$$

What is  $\widehat{ABC}$ ?

$$80^\circ$$

$$\widehat{ADB} = 20^\circ$$

What is  $\widehat{ABC}$ ?

$$70^\circ$$

$$\widehat{ADB} = 20^\circ$$

What is  $\widehat{AEB}$ ?  
(2 answers)

$$20^\circ \text{ or } 160^\circ$$

### Circle Theorems

$C$  is the centre of the circle, all other points are on the circumference.  
All the angles are less than  $180^\circ$ .

$$\widehat{ABC} = 20^\circ$$

What is  $\widehat{ACB}$ ?

$$140^\circ$$

$$\widehat{ABC} = 20^\circ$$

What is  $\widehat{ADB}$ ?  
(2 answers)

$$70^\circ \text{ or } 110^\circ$$

$$\widehat{ADB} = 90^\circ$$

What is  $\widehat{AEB}$ ?

$$90^\circ$$

$$\widehat{ACB} = 20^\circ$$

What is  $\widehat{ADB}$ ?  
(2 answers)

$$10^\circ \text{ or } 170^\circ$$

## Circle Theorems

$C$  is the centre of the circle, all other points are on the circumference.  
All the angles are less than  $180^\circ$ .

### Ratio

$\widehat{ADB}$  and  $\widehat{AEB}$  are  
in the ratio  $2 : 7$ .

What is  $\widehat{ADB}$ ?

$40^\circ$

### Percentages

$\widehat{ABC}$  is 25% of the  
size of  $\widehat{ACB}$ .

What is  $\widehat{ABC}$ ?

$30^\circ$

### Sequences

The angles of  
quadrilateral  $ABDE$  form  
an arithmetic sequence.  
The smallest angle is  $45^\circ$ .

What is the second  
smallest angle?

$105^\circ$

## Circle Theorems

$C$  is the centre of the circle, all other points are on the circumference.  
All the angles are less than  $180^\circ$ .

### Equations

$\widehat{ABC}$  is  $10^\circ$  greater  
than  $\widehat{ADB}$ .

What is  $\widehat{ABC}$ ?

$50^\circ$

### Averages

The mean of  $\widehat{ACB}$   
and  $\widehat{ADB}$  is  $24^\circ$ .

What is  $\widehat{ADB}$ ?

$16^\circ$

### Bounds

$\widehat{ACB}$  is  $30^\circ$ ,  
to the nearest  $10^\circ$ .

What is the range of  
possible values for  $\widehat{ADB}$ ?

$12.5^\circ \leq \theta < 17.5^\circ$   
or  
 $172.5 < \theta \leq 177.5$