

# 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

$C$  is the centre of the circle, all other points are on the circumference.  
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## Ratio

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

What is  $\widehat{ADB}$ ?

## Equations

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

What is  $\widehat{ABC}$ ?

## Percentages

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

What is  $\widehat{ABC}$ ?

## Averages

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

What is  $\widehat{ADB}$ ?

## Sequences

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

What is the second  
smallest angle?

## Bounds

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

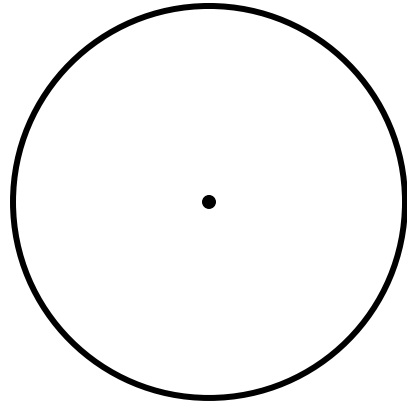
What is the range of  
possible values for  $\widehat{ADB}$ ?

# Circle Theorems

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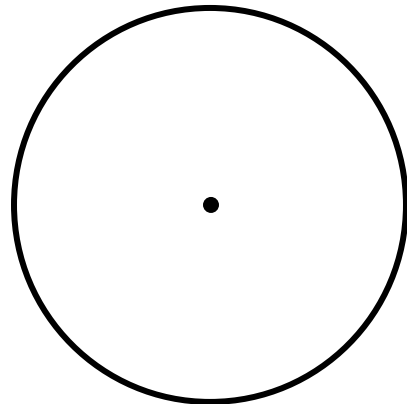
$$\hat{A}DB = 20^\circ$$

What is  $\hat{A}CB$ ?



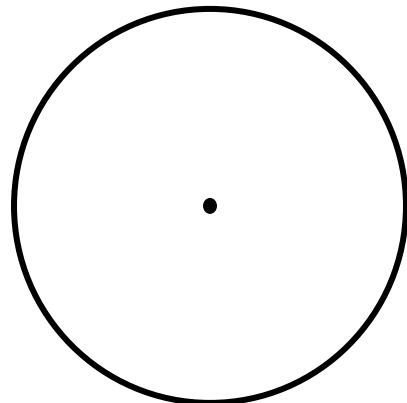
$$\hat{A}CB = 20^\circ$$

What is  $\hat{A}BC$ ?



$$\hat{A}DB = 20^\circ$$

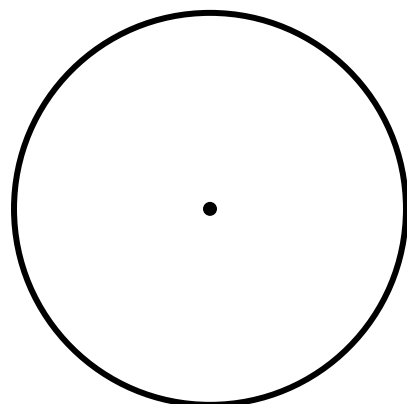
What is  $\hat{A}BC$ ?



$$\hat{A}DB = 20^\circ$$

What is  $\hat{A}EB$ ?

(2 answers)

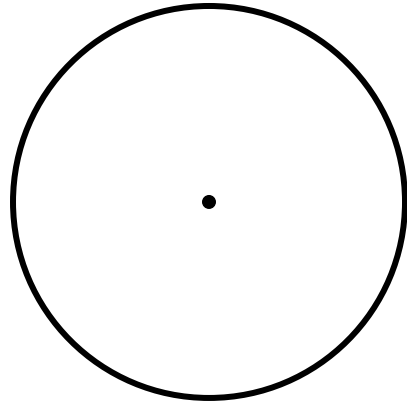


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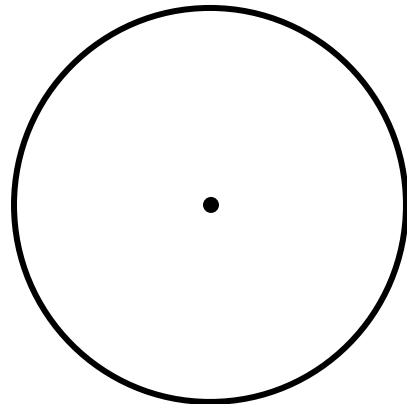
$$\hat{A}BC = 20^\circ$$

What is  $\hat{A}CB$ ?



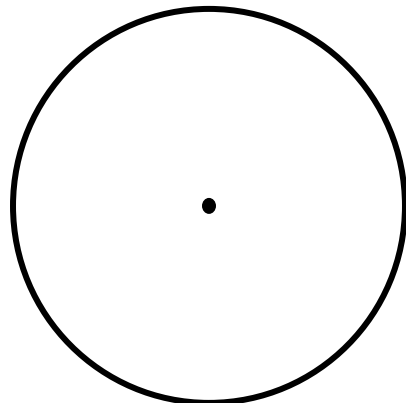
$$\hat{A}BC = 20^\circ$$

What is  $\hat{A}DB$ ?



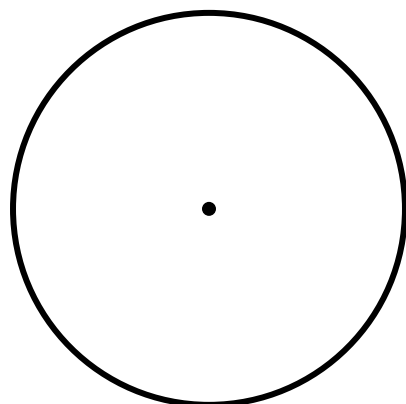
$$\hat{A}DB = 90^\circ$$

What is  $\hat{A}EB$ ?



$$\hat{A}CB = 20^\circ$$

What is  $\hat{A}DB$ ?  
(2 answers)



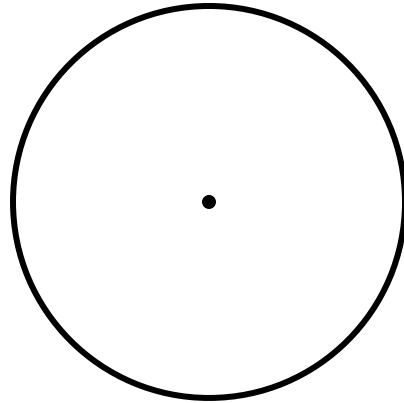
# Circle Theorems

$C$  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  $2 : 7$ .

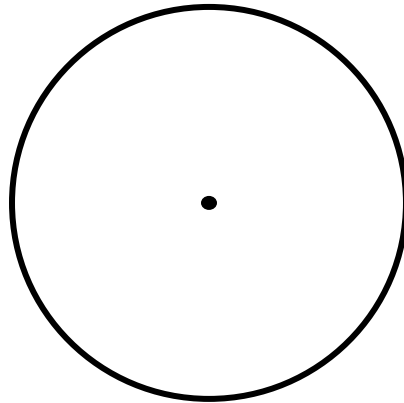
What is  $\widehat{ADB}$ ?



## Percentages

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

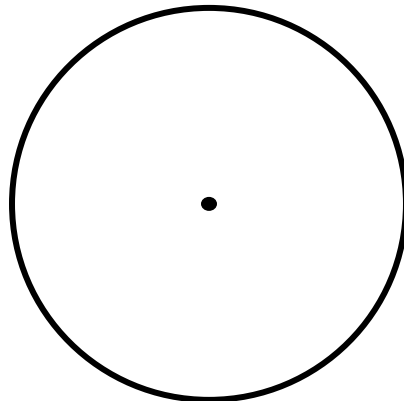
What is  $\widehat{ABC}$ ?



## Sequences

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

What is the second  
smallest angle?



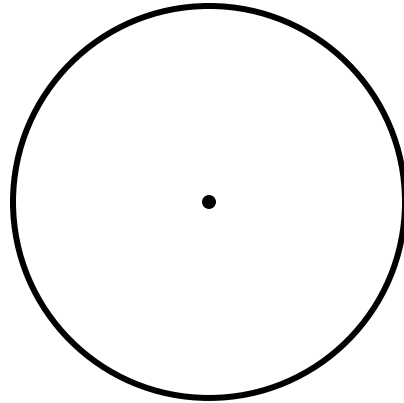
# Circle Theorems

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

## Equations

$\hat{A}BC$  is  $10^\circ$  greater than  $\hat{A}DB$ .

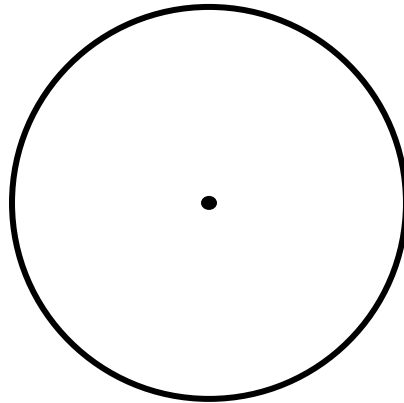
What is  $\hat{A}BC$ ?



## Averages

The mean of  $\hat{A}CB$  and  $\hat{A}DB$  is  $24^\circ$ .

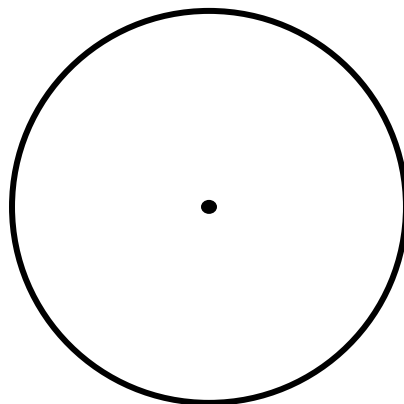
What is  $\hat{A}DB$ ?



## Bounds

$\hat{A}CB$  is  $30^\circ$ ,  
to the nearest  $10^\circ$ .

What is the range of possible values for  $\hat{A}DB$ ?



# 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  $A\hat{C}B$ ?

$$40^\circ$$

$$A\hat{C}B = 20^\circ$$

What is  $A\hat{B}C$ ?

$$80^\circ$$

$$A\hat{D}B = 20^\circ$$

What is  $A\hat{B}C$ ?

$$70^\circ$$

$$A\hat{D}B = 20^\circ$$

What is  $A\hat{E}B$ ?  
(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)

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



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$C$  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?

$75^\circ$

# Circle Theorems

$C$  is the centre of the circle, all other points are on the circumference.  
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## Equations

$\hat{A}BC$  is  $10^\circ$  greater  
than  $\hat{A}DB$ .

What is  $\hat{A}BC$ ?

$50^\circ$

## Averages

The mean of  $\hat{A}CB$   
and  $\hat{A}DB$  is  $24^\circ$ .

What is  $\hat{A}DB$ ?

$16^\circ$

## Bounds

$\hat{A}CB$  is  $30^\circ$ ,  
to the nearest  $10^\circ$ .

What is the range of  
possible values for  $\hat{A}DB$ ?

$12.5^\circ \leq \theta < 17.5^\circ$   
or  
 $162.5 < \theta \leq 167.5$