

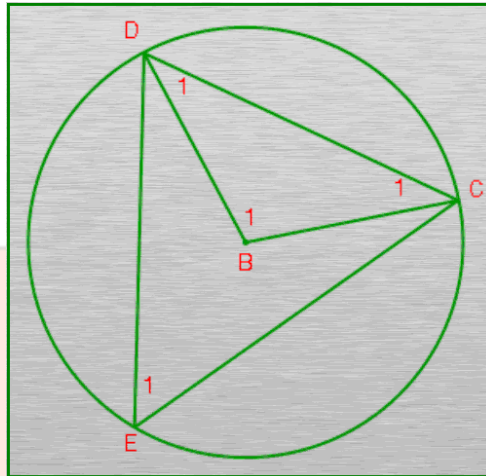


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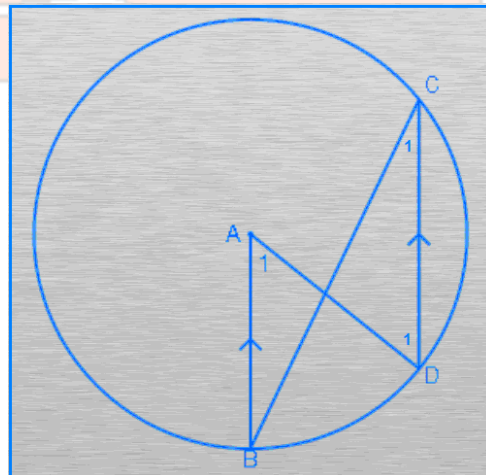
Grade 11 Euclidian Geometry

11.7 Angles at centre and cyclic quadrilaterals

1. Calculate the values of the numbered angles on the sketch if $\hat{D}_1 = 40^\circ$ and B the centre of the circle.



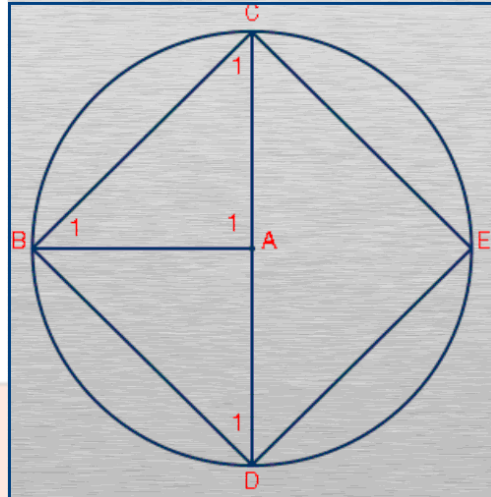
2. Calculate the value of the numbered angles if $\hat{B} = 27^\circ$ and A the center of the circle.



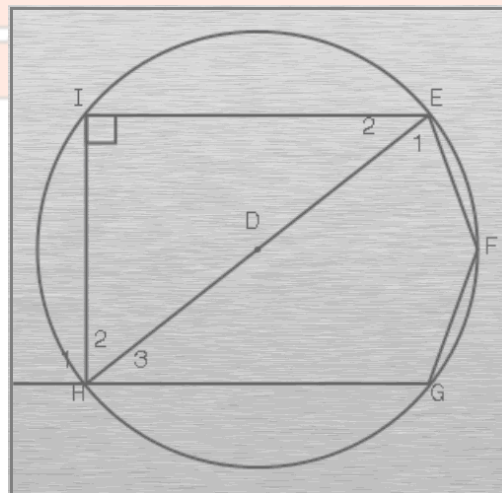


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3. Calculate the value of the numbered angles if $\hat{C}_1 = 51^\circ$ and A the center of the circle.



4. If $\hat{H}_1 = 93^\circ$, $\hat{H}_2 = 56^\circ$ and $\hat{E}_1 = 57^\circ$, calculate the following angles:
 (a) \hat{E}_2 (b) \hat{F} (c) \hat{G}

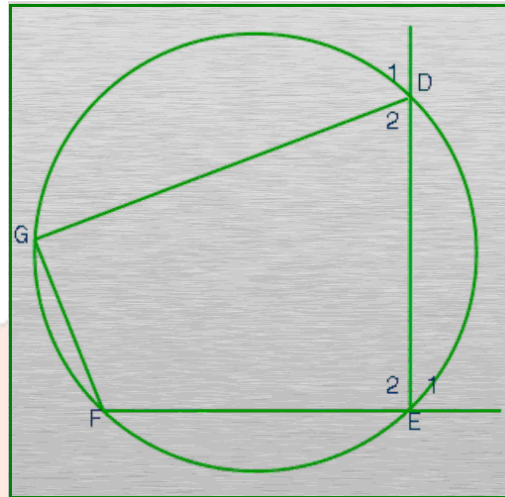




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5. If $\hat{E}_1 = 87^\circ$ and $\hat{F} = 112^\circ$, calculate the following angles:

- (a) \hat{G} (b) \hat{D}_1





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MEMO

[8.5.4.2; 8.5.8; 8.5.9]

1. $\hat{D}_1 = \hat{C}_1 = 40^\circ$ DB = BC (radii)
 $\hat{B}_1 = 180^\circ - 80^\circ$ inter. \angle 's of Δ
 $\hat{B}_1 = 100^\circ$
 $\hat{E}_1 = \frac{1}{2}\hat{B}_1 = 20^\circ$ \angle at circumference

2. $\hat{B} = \hat{C}_1 = 27^\circ$ alternate \angle 's, AB//CD
 $\hat{A}_1 = 2\hat{C}_1 = 54^\circ$ \angle in center
 $\hat{D}_1 = \hat{A}_1 = 54^\circ$ alternate \angle 's, AB//CD

3. $\hat{B}_1 = \hat{C}_1 = 51^\circ$ AB = AC (radii)
 $\hat{A}_1 = 180^\circ - 102^\circ$ inter. \angle 's of Δ
 $\hat{A}_1 = 78^\circ$
 $\hat{D}_1 = \frac{1}{2}\hat{A}_1 = 39^\circ$ \angle at circumference

4(a) $\hat{E}_2 = 180^\circ - 90^\circ - 56^\circ$ inter. \angle 's of Δ
 $\hat{E}_2 = 34^\circ$

(b) $\hat{F} = 93^\circ + 56^\circ$ exterior \angle 's cyclic quad
 $\hat{F} = 149^\circ$

(c) $\hat{G} + \hat{E}_1 = 180^\circ$ opposite \angle 's cyclic quad
 $\hat{G} = 123^\circ$

5(a) $\hat{G} = \hat{E}_1 = 87^\circ$ exterior \angle 's cyclic quad

(b) $\hat{D}_1 = \hat{F} = 112^\circ$ exterior \angle 's cyclic quad