



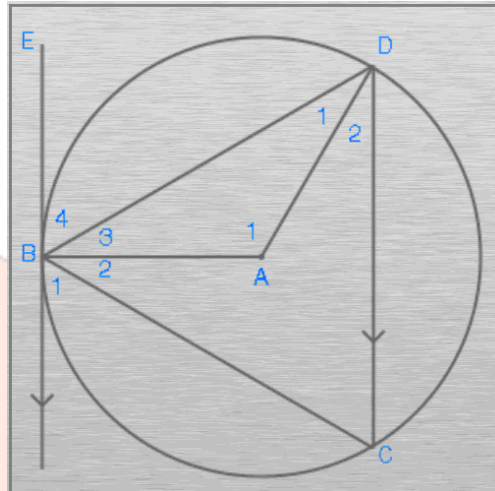
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GRADE 11 Euclidian Geometry

11.7 Tangents

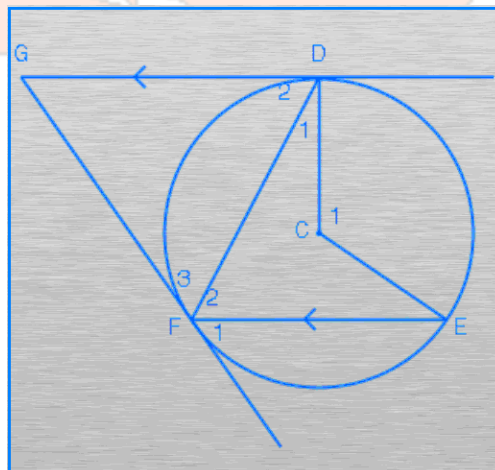
1. If $\hat{A}_1 = 114^\circ$ and A is the circle center, calculate the following angles:

- (a) \hat{C} (b) \hat{B}_1 (c) \hat{B}_3 (d) \hat{D}_2



2. If $\hat{C}_1 = 124^\circ$ and C is the circle center, calculate the following angles:

- (a) \hat{F}_2 (b) \hat{D}_2 (c) \hat{D}_1

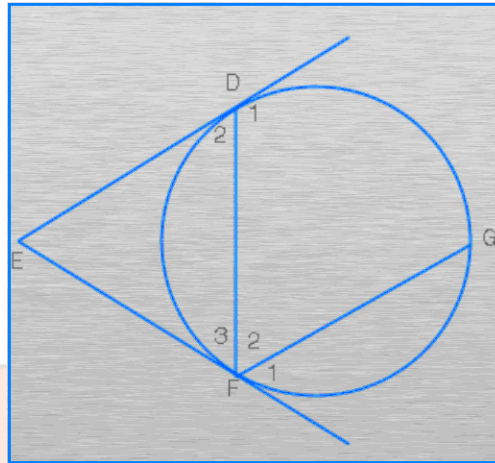




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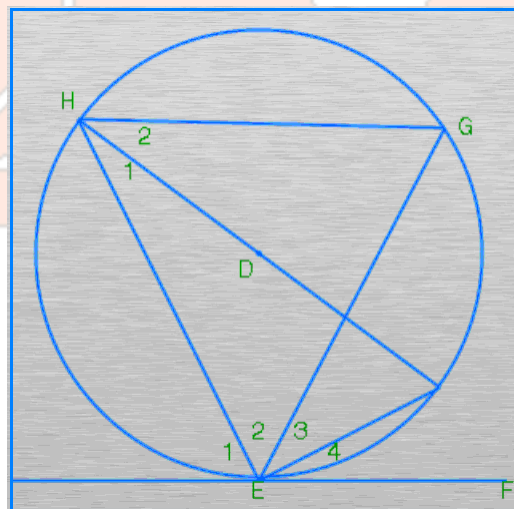
3. If $DE \parallel FG$ and $\hat{D}_1 = 128^\circ$, calculate the following angles:

- (a) \hat{D}_2 (b) \hat{F}_3 (c) \hat{F}_1



4. If $\hat{E}_2 = 46^\circ$ and $\hat{E}_4 = 28^\circ$ with D the circle center, calculate the following angles:

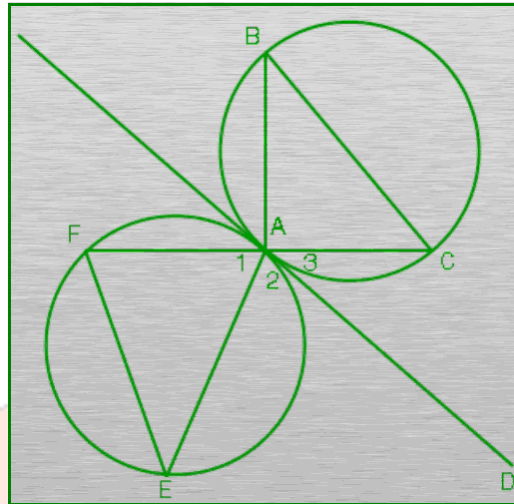
- (a) \hat{H}_1 (b) \hat{E}_3 (c) \hat{H}_2





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5. If FAC is a straight line, $\hat{B} = 40^\circ$ and $\hat{A}_1 = 79^\circ$, calculate the following angles:
(a) \hat{A}_2 (b) \hat{F}





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MEMO

[8.6.1; 8.6.2; 8.6.3; 8.6.4]

1(a) $2\hat{C} = \hat{A}_1$ < on circumference
 $\hat{C} = 57^\circ$

(b) $\hat{B}_1 = \hat{C} = 57^\circ$ alternate <'s BE//CD

(c) $\hat{B}_3 + \hat{D}_1 + \hat{A}_1 = 180^\circ$ interior <'s of Δ
 $\hat{B}_3 = \hat{D}_1$ isosceles Δ
 $2\hat{B}_3 = 180^\circ - 114^\circ$
 $\hat{B}_3 = 33^\circ$

(d) $\hat{D}_1 + \hat{D}_2 = \hat{B}_1$ BE tangent, BC chord
 $\hat{D}_2 = 24^\circ$

2(a) $2\hat{F}_2 = \hat{C}_1$ < on circumference
 $\hat{F}_2 = 62^\circ$

(b) $\hat{D}_2 = \hat{F}_2 = 62^\circ$ DG tangent, DF chord

(c) $\hat{D}_1 + \hat{D}_2 = 90^\circ$ tangent \perp radius
 $\hat{D}_1 = 28^\circ$

3(a) $\hat{D}_1 + \hat{D}_2 = 180^\circ$ suppl <'s
 $\hat{D}_2 = 52^\circ$

(b) $\hat{F}_3 = \hat{D}_2 = 52^\circ$ tangents from common point E

(c) $\hat{F}_2 = \hat{D}_2 = 52^\circ$ alternate <'s DE//FG



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	$\hat{F}_1 = 180^\circ - 52^\circ - 52^\circ$	suppl \angle 's
	$\hat{F}_1 = 76^\circ$	
4(a)	$\hat{H}_1 = \hat{E}_4 = 28^\circ$	EF tangent, chord
(b)	$\hat{E}_3 + \hat{E}_2 = 90^\circ$	\angle on diameter
	$\hat{E}_3 = 44^\circ$	
(c)	$\hat{H}_2 = \hat{E}_3 = 44^\circ$	angles in same segment
5(a)	$\hat{A}_3 = \hat{B} = 40^\circ$	tangent and chord
	$\hat{A}_1 + \hat{A}_2 + \hat{A}_3 = 180^\circ$	suppl \angle 's
	$\hat{A}_2 = 61^\circ$	
(b)	$\hat{F} = \hat{A}_2$	tangent and chord
	$\hat{F} = 61^\circ$	