NAME \_\_\_\_\_\_ INDEX NUMBER \_\_\_\_\_

SCHOOL \_\_\_\_\_ DATE \_\_\_\_\_

## **ANGLES AND PLANE FIGURES**

KCSE	1989 – 2012 Form 1 Mathematics	Working space
1.	1989 Q8 P2	
	In the figure below, GI is parallel to HI and FH is parallel	
	to CI. Angle AGB = $30^{\circ}$ , and angle AHC = $63^{\circ}$ . Find angle	
	GCJ (2marks)	
	_	
	$\bigwedge^{F}$	
	A E	
	G 300 J	
	B D	
	H 63°	
	C	
2.	1991 Q10 P2	
	In the figure below AP $//DE < APC = 700$ and $< CDE = 220$	
	In the figure below AB // DE, $\langle ABC = 70^{\circ}$ and $\langle CDE = 23^{\circ}$ .	
	/ <b>A</b>	
	D	
	A A	
	<u>∕∖70°</u> C	
	В	
	E	
		Working Space



<ul> <li>Find by calculation the sum of all the interior angles in the figure ABCDEFGHI below</li> <li>ACDEFGHI below</li> <li>ACD</li></ul>	5.	1999 Q 3 P1	
the figure ABCDEFGHI below $H$ $H$ $G$ 2000 Q 3 P1         In the figure below ABCD is a rectangular pentagon and M is the midpoint of AB. DM intersects EB at N. $H$		Find by calculation the sum of all the interior angles in	
8.       2001 Q 3 P1 In the figure below ABCD is a rectangular pentagon and M is the midpoint of AB. DM intersects EB at N. $I = I = I = I = I = I = I = I = I = I =$		the figure ABCDEFGHI below	
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G       F       D         6.       2000 Q 3 P1       In the figure below ABCD is a rectangular pentagon and M is the midpoint of AB. DM intersects EB at N.         Image: Control of AB. DM intersects EB at N.       Image: Control of AB. DM intersects EB at N.         Image: Control of AB. DM intersects EB at N.       Image: Control of AB. DM intersects EB at N.         Image: Control of AB. DM intersects EB at N.       Image: Control of AB. DM intersects EB at N.         Image: Control of AB. DM intersects EB at N.       Image: Control of AB. DM intersects EB at N.         Image: Control of AB. DM intersects EB at N.       Image: Control of AB. DM intersects EB at N.         Image: Control of AB. DM intersects EB at N.       Image: Control of AB. DM intersects EB at N.         Image: Control of AB. DM intersects EB at N.       Image: Control of AB. DM intersects EB at N.         Image: Control of AB. DM intersects EB at N.       Image: Control of AB. DM intersects EB at N.         Image: Control of AB. DM intersects EB at N.       Image: Control of C		H	
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8.       2004 Q 2 P1         The size of an interior angle of a regular polygon is 156°.         Find the number of sides of the polygon.		$110^{\circ}$ , $130^{\circ}$ and $160^{\circ}$ . Find the value of the smallest angle	
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Find the number of sides of the polygon.	0.	<b>LUUT Q 2 F 1</b> The size of an interior angle of a regular network is $150$	
		Find the number of sides of the polygon	
		The me number of sides of the polygon.	
Working Space			Working Space

9.	2005 0 5 P1	
	The size of each interior angle of a regular polygon is five	
	times the size of the exterior angle. Find the number of	
	sides of the polygon. (3 marks)	
10.	2006 0 4 P1	
_		
	In the figure below, ABCDE is a regular pentagon and ABF	
	is an equilateral triangle (1mark)	
	D	
	F	
	ATA	
	B	
	V	
	Find the size of A	
	$r = \frac{1}{2} (1 \text{ mark})$	
	a) $\angle ADE$ (I IIIal K) b) $\angle AEE$ (1 mark)	
	$DJ \ \angle AEF \qquad (I mark)$	
	C) Z DAF (1 mark)	
11.	2007 0 2 P1	
	The size of an interior angle of a regular polygon is $3x^0$	
	while its exterior angle is $(x - 20)^{\circ}$ . Find the number of	
	sides of the polygon (3 marks)	
	1,55	
4.5		
12.	2009 Q 10 P1	
	The size of an interior angle of a regular polygon is $6\frac{1}{2}$	
	times that of its exterior angle. Determine the number of	
	sides of the polygon (3 marks)	
1		

## ANGLES AND PLANE FIGURES MARKING SCHEME

1.	$<$ AHC = $<$ DCI = $63^{\circ}$	2M
	< HCB = $<$ ABG =30 <sup>o</sup>	
	$< G CJ = 180^{\circ} - (30^{\circ} + 63^{\circ})$	
	= 870	
	1989Q8	
2	< BCD = < CDE + < CEO	3M
	< CED = 180 <sup>0</sup> - 700	-
	$= 110^{0}$	
	133 <sup>0</sup>	
	1991Q10	
3.	SR=RQ ; <qrs =55<sup="">0</qrs>	B1
	<sqp=55<sup>o ALT to <rsq< th=""><th>B1</th></rsq<></sqp=55<sup>	B1
	<STQ =90 <sup>0</sup> - 55 <sup>0</sup> =35 <sup>0</sup>	
	$OR 180^{\circ} - (90^{\circ} + 55^{\circ}) \sqrt{-250}$	
	=350 V 199702	2
	1997Q3	∠ marks
4.	(a) $< CDF = 110^{\circ} - 60^{\circ} = 50^{\circ}$	A1
	(b) < ABD = < BDE = $25^{\circ}$	
	Both reasoning given and both	B1
	Reasoning given wrong – ow-1	1F
	One reason given (right or wrong)	
	0w-1	2
	1998Q4	3mark
5.	2n-4 right angles	3
	2x 9 - 4 = 14 right angles	M1
	$14 \ge 90^{\circ} = 1260^{\circ}$	A1
	1999Q3	2
		marks
6.	a) $$	B1
	D) $< BAE - 108^{\circ} - 36^{\circ} - 72^{\circ}$	BI D1
	200003	3
	20000	marks
7.	angle sum of interior angles	B1
	=90(2n-4)	
	$= 90(12-4) = 720^{\circ}$	B1
		<b>D</b> 4
	$2x^{\circ} + \frac{1}{2}x^{\circ} + 40^{\circ} + 110^{\circ} + 130^{\circ} + 160^{\circ}$	RI
	-/20°	
	$2.5x0 = 720^{\circ} - 440^{\circ}$	3
	$2.5x = 280^{\circ} 2.5x = 280^{\circ}$	marks
	x <sup>0</sup> =112 <sup>0</sup>	
	smallest angle is $\frac{1}{2} x^0 + 40^0$	
	$= \frac{1}{2} \times 112 + 40^{\circ}$	
	$= 960^{\circ}$	
	2001014	
	2001014	

8.	(180º-156º)n=36º	
	24n=36 <sup>0</sup>	M1
	$N = \frac{360}{24}$	A1
	= 15	
	2004Q2	
9.	6x = 3600	B1
	x = 600	
	(180-60)n = 360	M1
	120n = 360	A1
	N = 3	3
	2005Q5	marks
10.	a). $<$ ADE = $180^{\circ}$ - $108^{\circ}$ = $360$	B1
	b). <aef (180<sup="" =="">°-(108<sup>°</sup>-60<sup>°</sup>)÷2</aef>	B1
	c). <dae =108<sup="">0 -(60<sup>0</sup>+36<sup>0</sup>)</dae>	B1
	=120	3
	2006Q4	marks
11.	$3x + (x-20) = 180^{\circ}$	A1
	$4x = 200^{\circ}$	M1
	$X = 50^{0}$	A1
	$(x_20)n = 360$	3
	30n-360	marks
	n = 12	marks
	2007Q2	
12.	Let exterior $< = <$ at the centre ) be x	M1
	6.5x + x = 180	
	7.5x = 180	
	X = 240	M1
	No of sides = $\frac{300}{24}$	
	= 15  sides	1 1
	2000040	Maules