High School Mathematics Test 2013

Year 7

Angle Properties

Non Calculator Section

Name_____

Skills and Knowledge Assessed:

- Use the language, notation and conventions of geometry.
- Recognise the geometric properties of angles at a point.
- Identify corresponding, alternate and co-interior angles when two straight lines are crossed by a transversal (ACMMG163)
- Investigate conditions for two lines to be parallel and solve simple numerical problems using reasoning (ACMMG164)

Answer all questions in the spaces provided on this test paper by:

Writing the answer in the box provided.

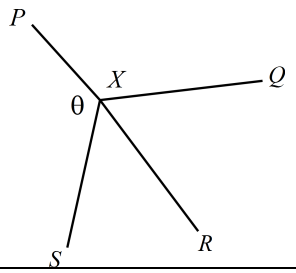
or

Shading in the bubble for the correct answer from the four choices provided.

Show any working out on the test paper.

You will need a protractor.

1. The angle marked θ could be labelled as :



☐ $\angle X$ ☐ $\angle PXS$

☐ $\angle PXQ$ ☐ $\angle PXR$

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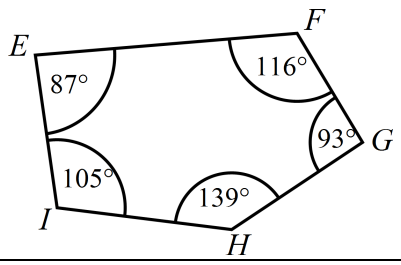
2. What are the sizes of the two angles $\angle EFG$ and $\angle GHI$ respectively?

☐ 87^o and 139^o.

☐ 116^o and 93^o.

☐ 116^o and 105^o.

☐ 116^o and 139^o.



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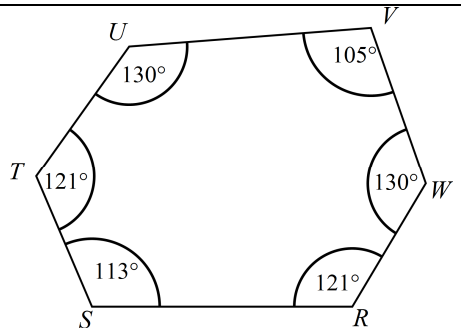
3. Name a pair of equal angles in the hexagon shown?

$\angle$ ☐ and $\angle$ ☐



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4. Complete the statement below.

Angles of 64^o and ☐ ^{o} are complementary angles.

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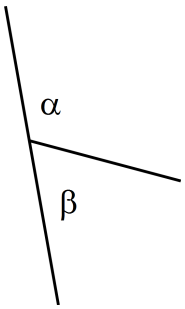
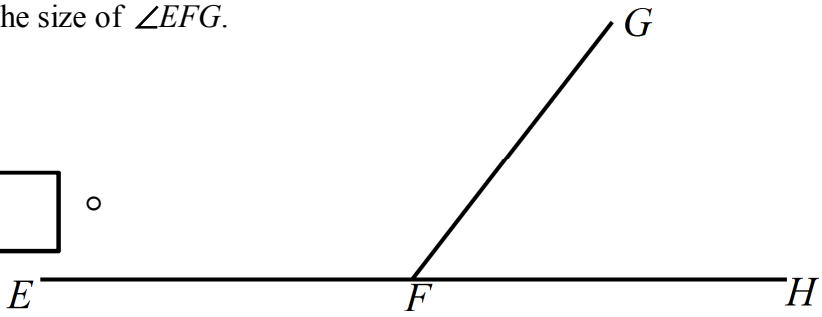
5. Which is an accurate description of the diagram?



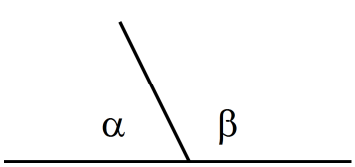
- ☐ α and β are a pair of adjacent, complementary angles.
- ☐ α and β are a pair of alternate, complementary angles.
- ☐ α and β are a pair of adjacent, supplementary angles.
- ☐ α and β are a pair of alternate, supplementary angles.

6. Use a protractor to measure the size of $\angle EFG$.

$\angle EFG = \square\ ^\circ$



7. In which diagram are there a pair of vertically opposite angles marked α and β?



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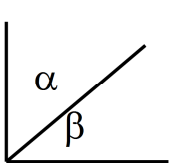

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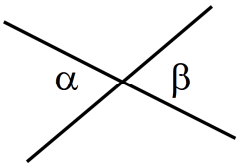

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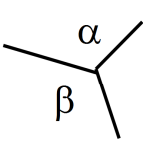
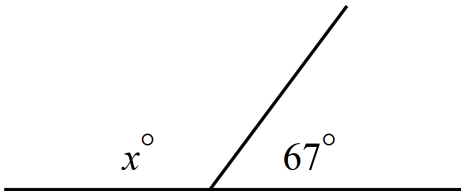


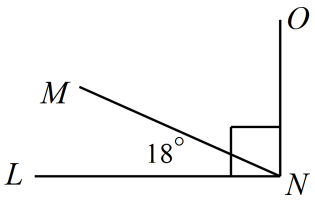
☐

8. Find the value of x in the diagram.

$x = \square$

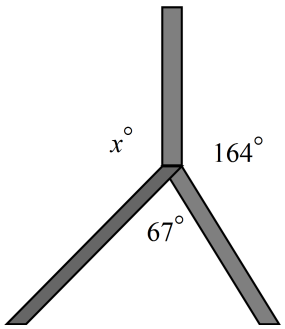


9. What is the size of $\angle MNO$?



☐ 18° ☐ 45° ☐ 72° ☐ 162°

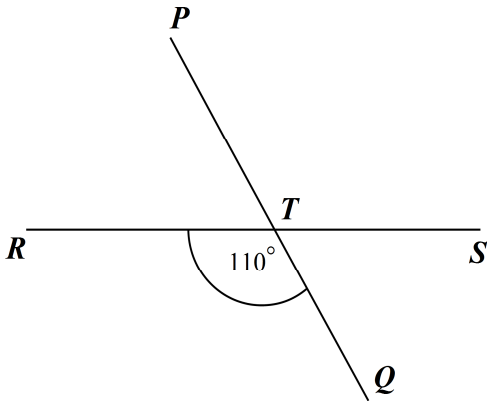
10. Three pieces of timber in a building join at a point as shown.



What is the value of x?

$x =$ ☐ °

11. The lines PQ and RS intersect at T.
$\angle TRQ = 110^\circ$
Which is true?



☐ $\angle PTS = 70^\circ$ and $\angle STQ = 70^\circ$

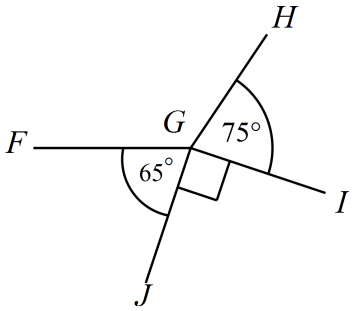
☐ $\angle PTS = 70^\circ$ and $\angle STQ = 110^\circ$

☐ $\angle PTS = 110^\circ$ and $\angle STQ = 110^\circ$

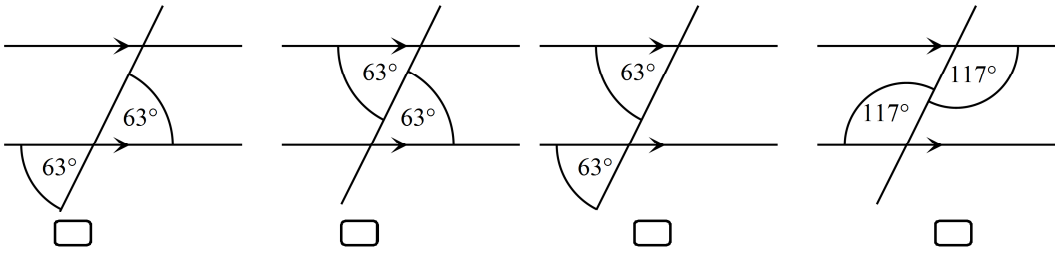
☐ $\angle PTS = 110^\circ$ and $\angle STQ = 70^\circ$

12. Calculate the size of $\angle FGH$.

$\angle FGH =$ ☐ °

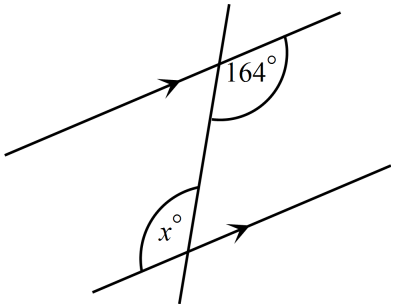


13. Which diagram shows a pair of equal corresponding angles?



☐ ☐ ☐ ☐

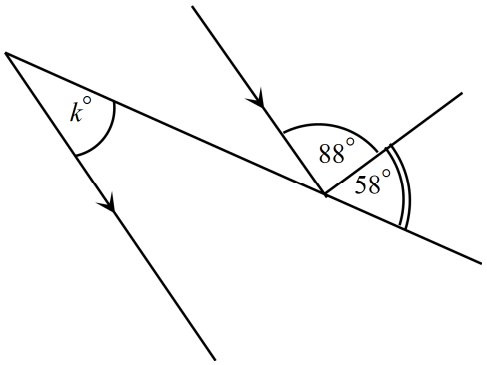
14. What is the value of x?



☐ 16° ☐ 41°

☐ 82° ☐ 164°

15. Find the value of k.



$k =$ ☐

High School Mathematics Test 2013

Year 7

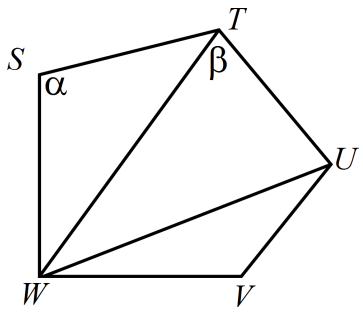
Angle Properties

Calculator Allowed Short Answer Section

Name_____

Answer all questions in the spaces provided on this test paper by:
Writing the answer in the box provided.
or
Shading in the bubble for the correct answer from the four choices provided.
Show any working out on the test paper. Calculators are allowed.

1. The angles marked α and β could be described as :



☐ $\angle WST$ and $\angle T$. ☐ $\angle STW$ and $\angle WTU$.

☐ $\angle S$ and $\angle T$. ☐ $\angle S$ and $\angle WTU$.

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2. Which is true about an angle of 125° ?

☐ Its complement is 55^o.

☐ It is an acute angle.

☐ Its supplement is 55^o.

☐ It is a straight angle.

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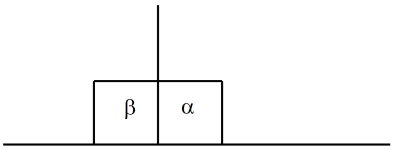
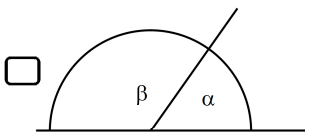
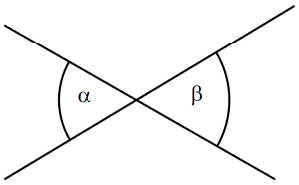
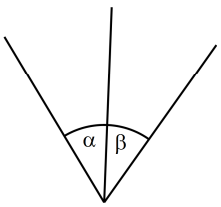
3. In which diagram are $\angle\alpha$ and $\angle\beta$ unequal, supplementary angles?

☐ 

☐ 

☐ 

☐ 

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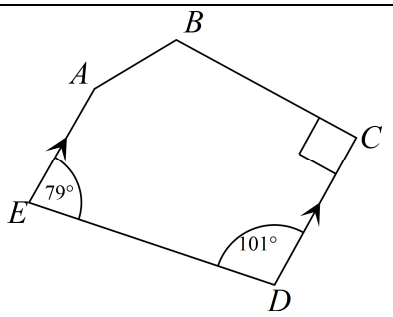
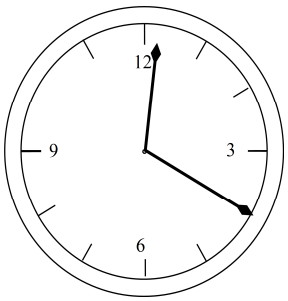
4. Which statement is correct?

- ☐ AE ⊥ ED and ED ⊥ CD
- ☐ AE || CD and BC ⊥ CD
- ☐ AE || CD and AE ⊥ ED
- ☐ AE ⊥ CD and BC || CD



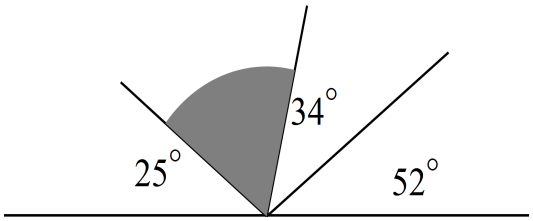
5. Through how many degrees does the minute hand of a clock move between 12:00 noon and 12:20 pm on the same day?

- ☐ 20°
- ☐ 60°
- ☐ 100°
- ☐ 120°

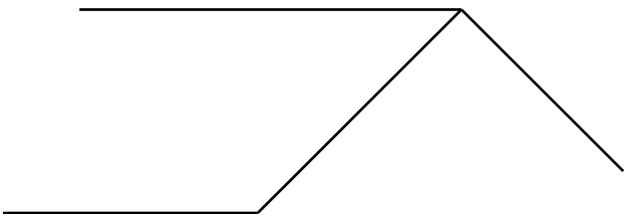


6. What is the size of the shaded angle?

- ☐ 21°
- ☐ 69°
- ☐ 111°
- ☐ 159°

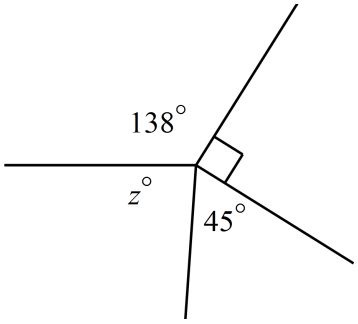


7. Use the correct symbols to mark a pair of parallel lines and a right angle on the diagram.

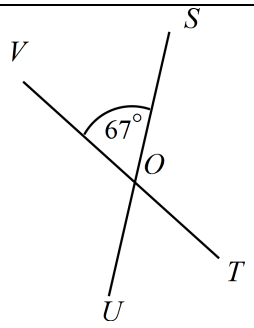


8. $z = ?$

- ☐ 45°
- ☐ 87°
- ☐ 183°
- ☐ 273°

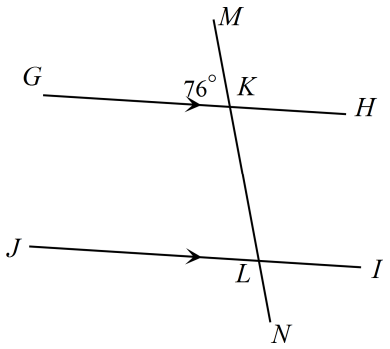


9. Find the size of $\angle UOT$.



$\angle UOT =$ ☐

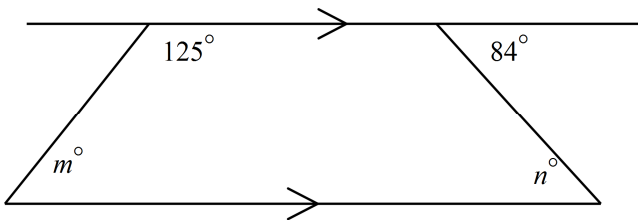
10. Find the size of $\angle JLK$.



$\angle JLK =$ ☐

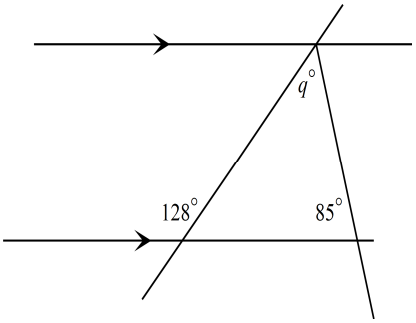
11. Which is true ?

- ☐ $m = 55$ and $n = 84$.
- ☐ $m = 55$ and $n = 96$.
- ☐ $m = 125$ and $n = 84$.
- ☐ $m = 125$ and $n = 96$.



12. What is the value of q?

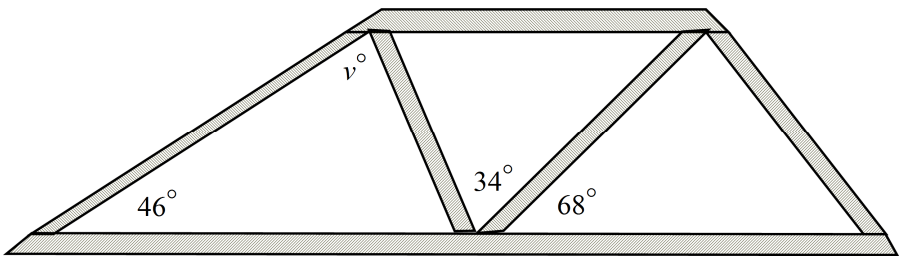
- ☐ $q = 33^\circ$
- ☐ $q = 43^\circ$
- ☐ $q = 85^\circ$
- ☐ $q = 128^\circ$



13. The diagram shows part of a roof structure.
The top and bottom timbers are parallel.

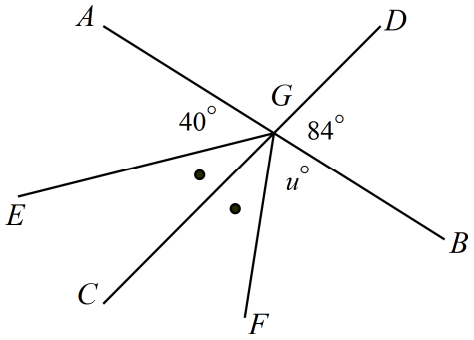
What is the value of v?

$v =$ ☐



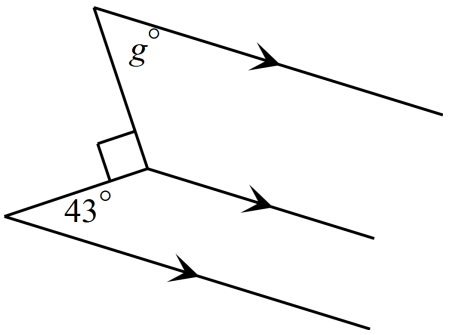
14. AB and CD are straight lines which intersect at G.
$\angle EGC = \angle CGF$.
What is the value of u?

$u =$ ☐



15. Find the value of g.

$g =$ ☐



High School Mathematics Test 2013

Year 7

Angle Properties

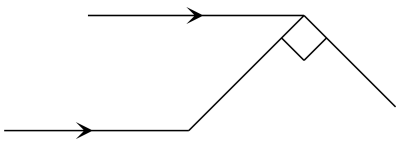
ANSWERS

Non Calculator Section

1.	$\angle PXS$
2.	116^o and 139^o.
3.	$\angle U$ and $\angle W$ or $\angle TUV$ and $\angle VWR$
4.	26
5.	α and β are a pair of adjacent, supplementary angles.
6.	128^o
7.	The third one

8.	$x = 113$
9.	72^o
10.	$x = 129^o$
11.	$\angle PTS = 110^\circ$ and $\angle STQ = 70^\circ$
12.	130^o
13.	The third one.
14.	164°
15.	$k = 34$

Calculator Allowed Section

1.	$\angle S$ and $\angle WTU$.
2.	Its supplement is 55^o
3.	The second one.
4.	AE || CD and BC $\perp$ CD
5.	120^o
6.	69^o
7.	
8.	87^o

9.	67^o
10.	76^o
11.	$m = 55$ and $n = 84$.
12.	43^o
13.	56^o
14.	$u = 52$
15.	$g = 47^\circ$