

# Diagram Sheet

**Question 1:**

Name: MEMO [85]



✓ BC  
 ✓ 37°  
 ✓ AB } ⊙ for accuracy  
 each  
 ✓ Labelling & equalities

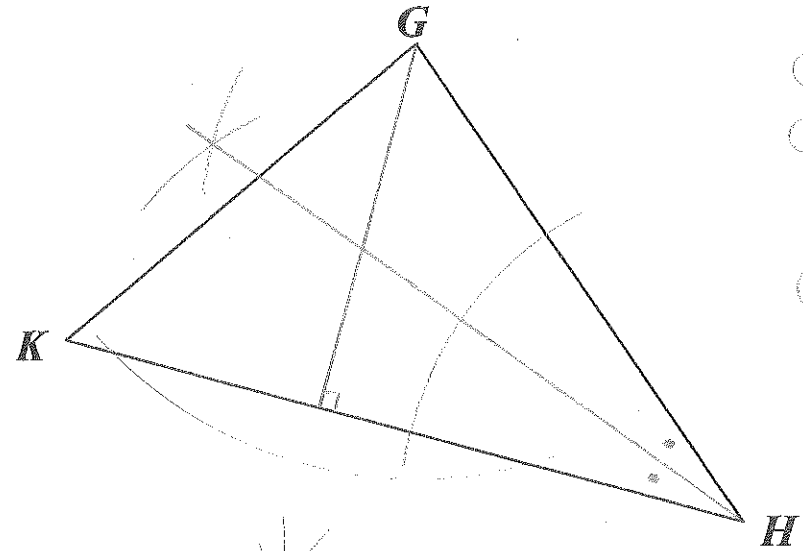
(3)

**Question 2:**

2.1  $\hat{K}GH = 85^\circ 1'$

2.2  $GH = 77mm$

- 2.3 ✓ First arc
- ✓ 2 intersecting arcs
- ✓ Accuracy
- 2.4 ✓ First arc
- ✓ 2 intersecting arcs
- ✓ 90° label
- ✓ Accuracy



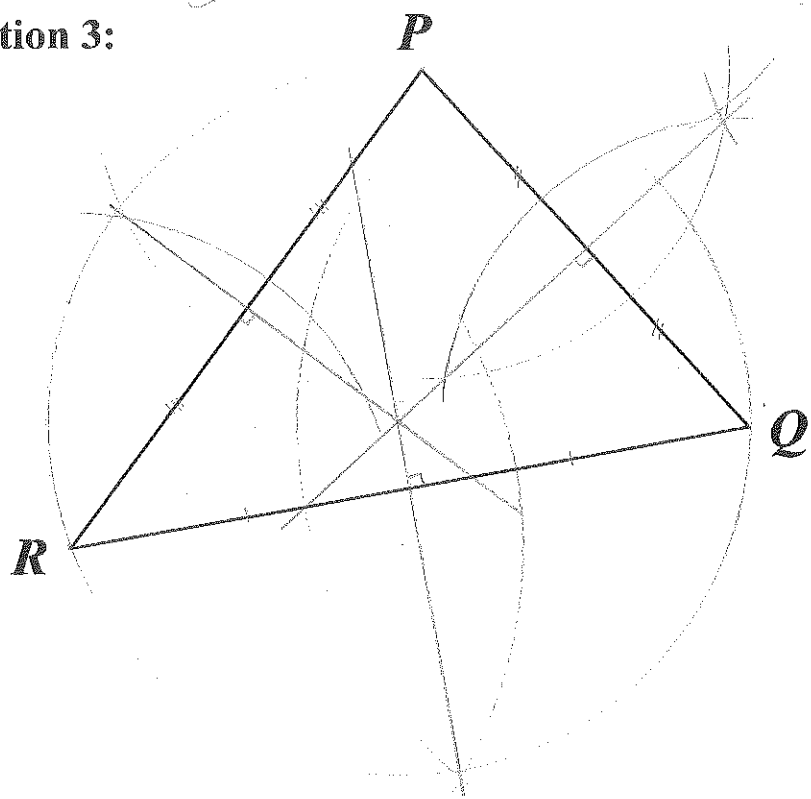
(2)

(2)

(4)

(4)

**Question 3:**

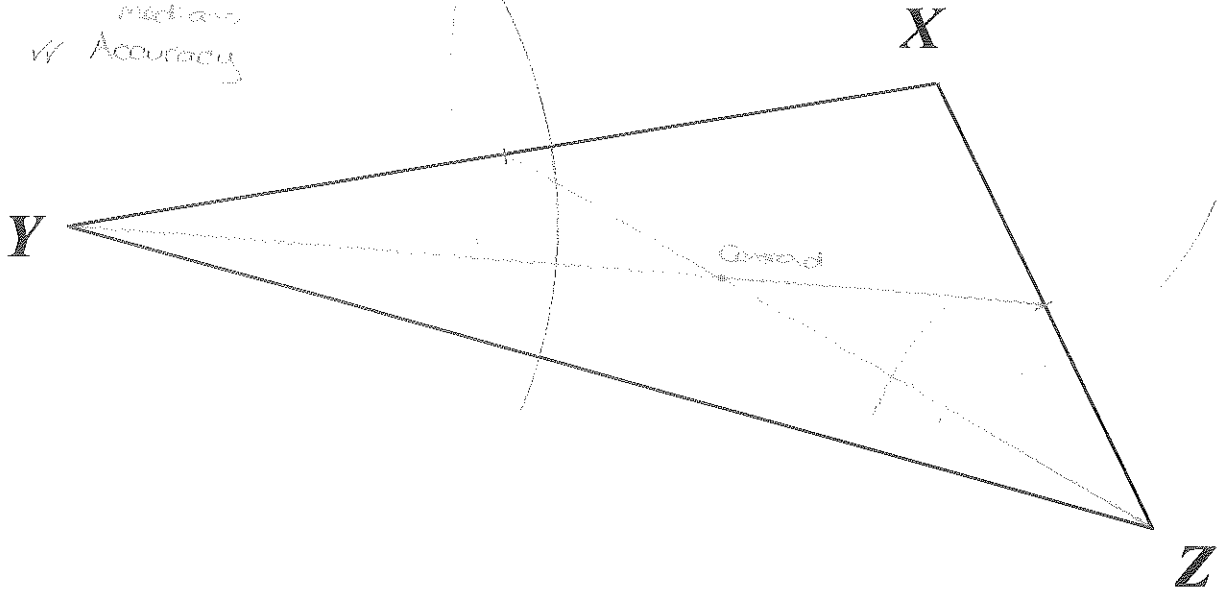


3x ✓ for each ⊥ bisector  
 ✓ circumscribed circle

(5)

**Question 4:**

- ✓ Using medians
- ✓ Correct method for median
- ✓ Accuracy

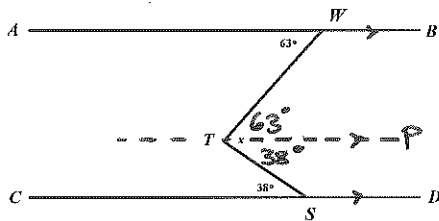


6

4.2 X to centroid = ... 39mm ✓

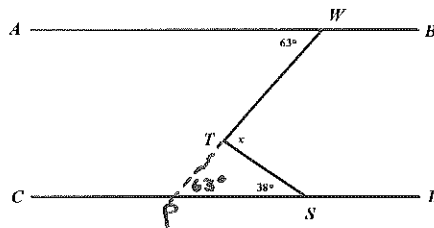
2

**Question 9:**



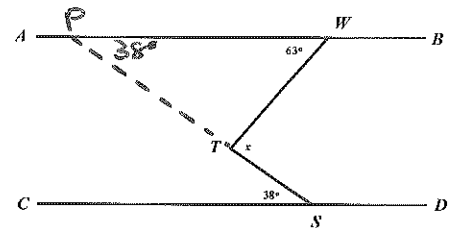
Const:  $TP \parallel CD$

Proof:  $\hat{PTS} = 38^\circ$  (alt.  $\angle$ s;  $TP \parallel CD$ )  
 $\hat{WTP} = 63^\circ$  (alt.  $\angle$ s;  $AB \parallel TP$ )  
 $\therefore x = 101^\circ$



Const: Extend  $WT$  to  $P$

Proof:  $\hat{WPS} = 63^\circ$  (alt.  $\angle$ s;  $AB \parallel CD$ )  
 $\therefore x = 101^\circ$  (ext.  $\angle$  of  $\triangle TPS$ )



Const: Extend  $ST$  to  $P$

Proof:  $\hat{WPT} = 38^\circ$  (alt.  $\angle$ s;  $AB \parallel CD$ )  
 $\therefore x = 101^\circ$  (ext.  $\angle$  of  $\triangle WPT$ )

✓ for each - be reasonably brief

Other constructions are possible.

3

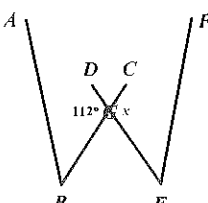
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QUESTION 5:

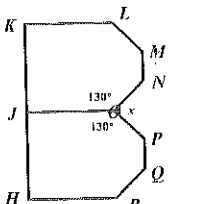
- a)  $113^\circ$  ✓
- b) The sum of the interior opposite angles ✓
- c) Supplementary ✓
- d) eight ✓
- e) at  $90^\circ$  ✓
- f) scalene ✓
- g) sixty ✓
- h) reflex ✓
- i)  $210^\circ$  ✓
- j)  $60^\circ + x$  ✓

(11)

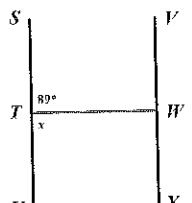
QUESTION 6:

a)   $x = 112^\circ$  (vert. opp.  $\angle$ s) ✓

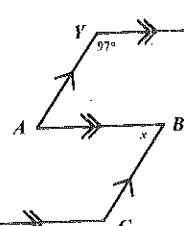
(2)

b)   $x = 100^\circ$  ( $\angle$ s around pt. O) ✓

(2)

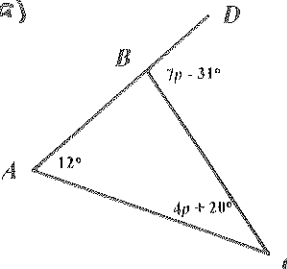
c)   $x = 91^\circ$  ( $\angle$ s on str. lines) ✓

(2)

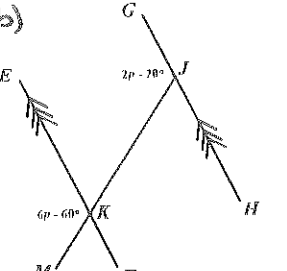
d)   $\hat{YAB} = 83^\circ$  (co-int.  $\angle$ s;  $YZ \parallel AB$ )  
 $\therefore x = 83^\circ$  (alt  $\angle$ s;  $AY \parallel CB$ ) ✓

(4)

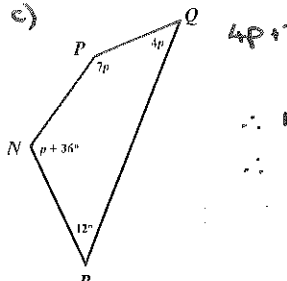
QUESTION 7:

a)   $12^\circ + 4p + 20^\circ = 7p - 31^\circ$  ✓  
 (sum of  $\triangle ABC$ )  
 $\therefore 4p + 32^\circ = 7p - 31^\circ$   
 $\therefore 4p + 63^\circ = 7p$   
 $\therefore 63^\circ = 3p$   
 $\therefore p = 21^\circ$  ✓

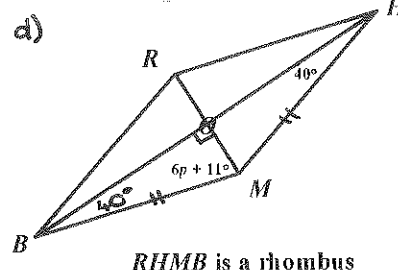
(4)

b)   $6p - 60^\circ = 2p - 20^\circ$  ✓  
 (corr  $\angle$ s;  $HG \parallel FE$ )  
 $\therefore 4p = 40^\circ$  ✓  
 $\therefore p = 10^\circ$  ✓  
 But this makes an impossible diagram. ✓

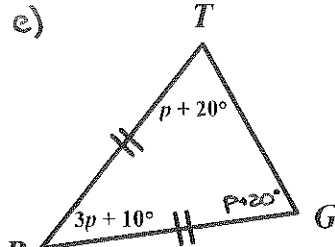
(4)

c)   $4p + 7p + p + 36^\circ + 12^\circ = 360^\circ$  ✓  
 ( $\angle$  sum in quad NPQR)  
 $\therefore 12p + 48^\circ = 360^\circ$   
 $\therefore 12p = 312^\circ$   
 $\therefore p = 26^\circ$  ✓

(4)

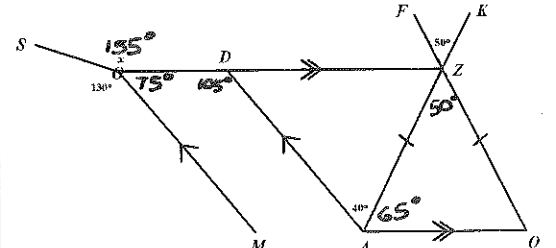
d)   $\angle BOM = 90^\circ$  ✓  
 (diag of rhombus)  
 $\angle OBM = 40^\circ$  ✓  
 ( $\angle$ s opp = sides, rhombus)  
 $\therefore 6p + 11^\circ + 40^\circ + 90^\circ = 180^\circ$   
 $\therefore 6p + 141^\circ = 180^\circ$   
 $\therefore 6p = 39^\circ$   
 $\therefore p = 6\frac{1}{2}^\circ$  ✓

(4)

e)   $\hat{TRG} = p + 20^\circ$  ✓  
 ( $\angle$ s opp = sides;  $TR = TG$ )  
 $3p + 10^\circ + p + 20^\circ + p + 20^\circ = 180^\circ$  ✓  
 ( $\angle$  sum in  $\triangle TRG$ )  
 $\therefore 5p + 50^\circ = 180^\circ$   
 $\therefore 5p = 130^\circ$  ✓  
 $\therefore p = 26^\circ$  ✓

(4)

QUESTION 8:

  $\hat{AZR} = 30^\circ$  (vert opp  $\angle$ s) ✓  
 $\hat{ZAQ} = 65^\circ$  ( $\angle$  sum  $\triangle ZAR$  &  $\angle$ s opp = sides,  $ZA = ZQ$ ) ✓  
 $\hat{OZA} = 105^\circ$  (alt  $\angle$ s;  $OZ \parallel AQ$ ) ✓  
 $\hat{MBZ} = 75^\circ$  (co-int.  $\angle$ s;  $MO \parallel AD$ ) ✓  
 $x = 155^\circ$  ( $\angle$ s around pt. O) ✓

Give 3 for answer, but no reasons. (5)