Diagram Sheet

Question 1:

Name: ...Memo...[85]...........

10cm

37°

B

14cm

C

✓ BC
✓ 37°   } ⊕ for accuracy on each
✓ AB

✓ Labelling & specifications

③

Question 2:

2.1 $K\hat{G}H$ = ...85° ±1°...✓   ②

2.2 GH = ...77mm ±1mm...✓   ②

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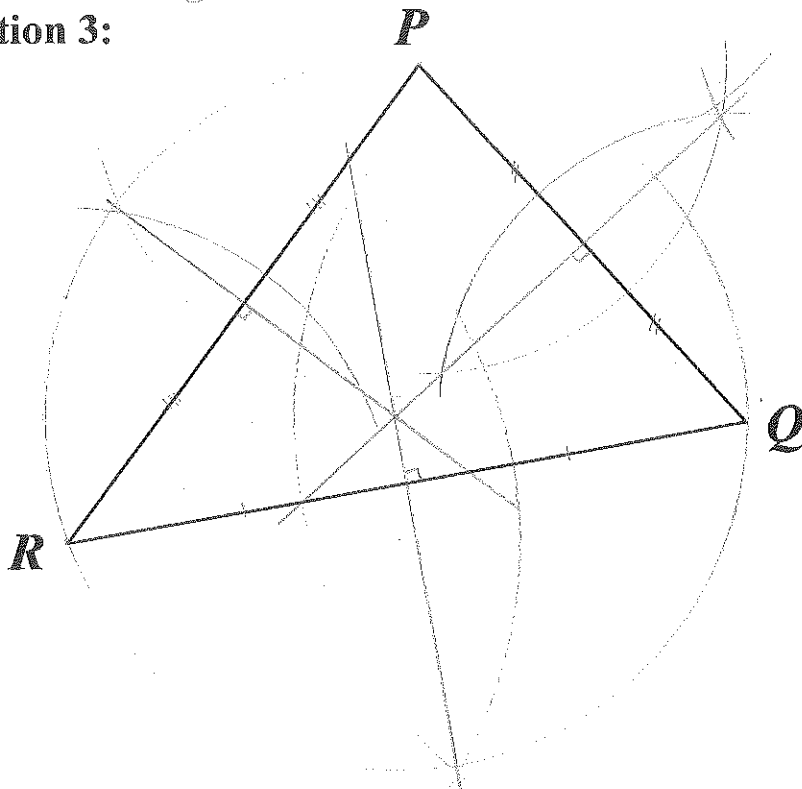   ✓ 2 intersecting arcs
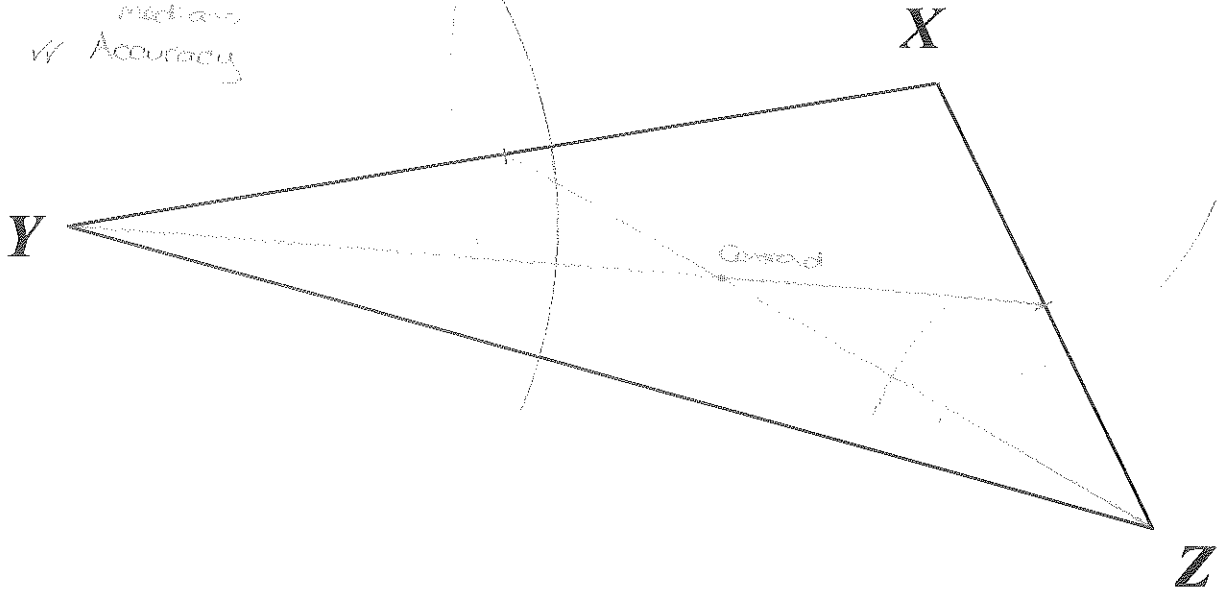   ✓ 90° label
       ✓ Accuracy

④

④

G

K

H

Question 3:

P
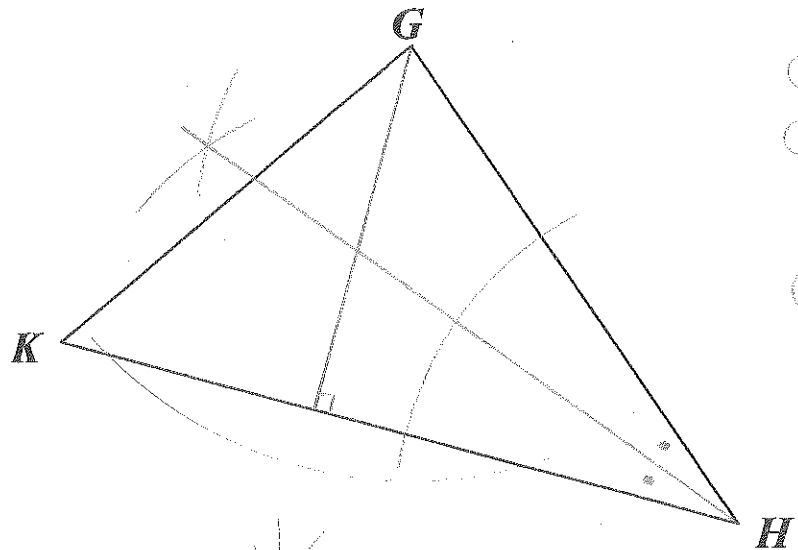
3x✓ for each ⊥ bisector
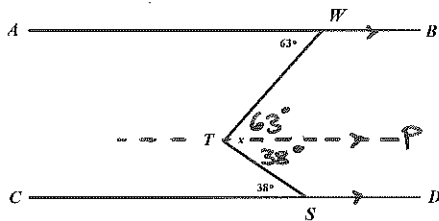✓ Circumscribed circle

R

Q

⑮

Question 4:

⑥

X

Y

Centroid

Z

4.2   *X* to centroid = ...39mm...✓

②

Question 9:

A ———————— W ———— B
          63°
      T x 63°
         38° — ⟩ — P
C ———————— S ———— D

A ———————— W ———— B
          63°
      T x
       63° 38°
      P   S
C ————————————— D

P 38°   W ———— B
A ————————   63°
      T° x
         38°
C ————————— S ———— D
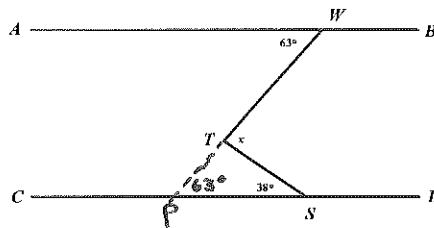
Constr: TP ∥ CD   Constr: Extend WT to P   Constr: Extend ST to P
Proof: PTŜ = 38° (alt.∠s;TP∥CD)   Proof: WP̂S = 63° (alt.∠s;AB∥CD)   Proof: WP̂T = 38° (alt.∠s;AB∥CD)
       WT̂P = 63° (alt.∠s;AB∥TP)   ∴ x = 101° (ext.∠ of △TPS)   ∴ x = 101° (ext.∠ of △WPT)
∴ x = 101°
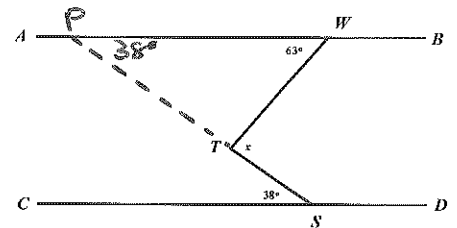
✓ for each – be reasonably lenient
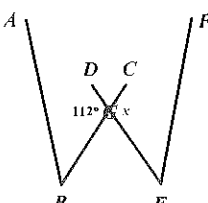
Other constructions are possible.
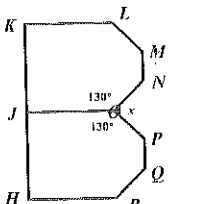
③

[35]

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QUESTION 5:

a) $113°$ ✓

b) the sum of the interior opposite angles ✓

c) supplementary ✓

d) eight ✓

e) at $90°$ ✓

f) scalene ✓
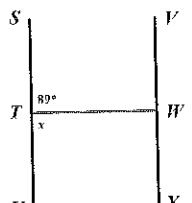
g) sixty ✓

h) reflex ✓

i) $210°$ ✓

j) $60° + x$ ✓ (11)

QUESTION 6:
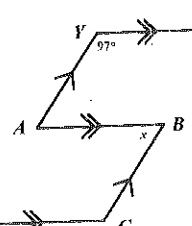
a)
$x = 112°$ (vert. opp. ∠s equal) ✓ (2)

b)
$x = 100°$ (∠s around pt. O) ✓ (2)
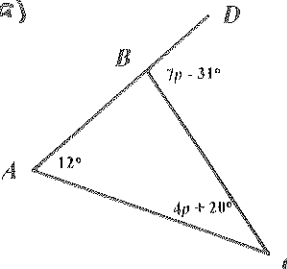
c)
$x = 91°$ (∠s on str. line SU) ✓ (2)
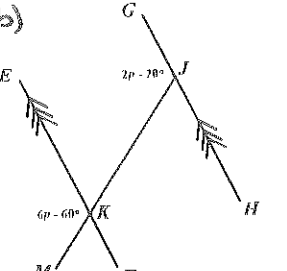
d)
$Y\hat{A}B = 83°$
(co-int. ∠s; YZ ‖ AB)
∴ $x = 83°$ ✓
(alt ∠s; AY ‖ CB) (4)
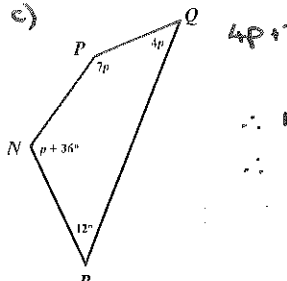
QUESTION 7:

a)
$12° + 4p + 20° = 7p - 31°$ ✓
(ext. ∠ of △ABC)
∴ $4p + 32° = 7p - 31°$
∴ $4p + 63° = 7p$
∴ $63° = 3p$ ✓
∴ $p = 21$ ✓ (4)
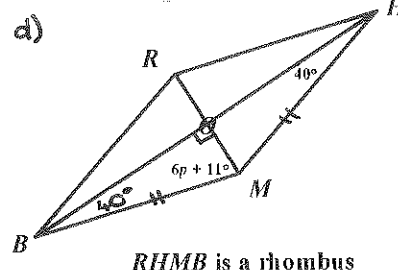
b)
$6p - 60° = 2p - 20°$ ✓
(corr ∠s; HG ‖ FE)
∴ $4p = 40°$ ✓
∴ $p = 10°$ ✓
But this makes an impossible diagram. (4)
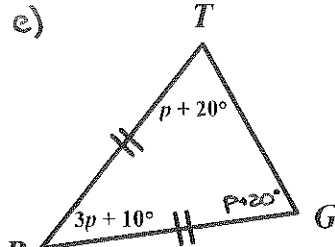
c)
$4p + 7p + p + 36° + 12° = 360°$ ✓
(∠ sum in quad NPQR)
∴ $12p + 48° = 360°$
∴ $12p = 312°$ ✓
∴ $p = 26°$ ✓ (4)

d)
RHMB is a rhombus
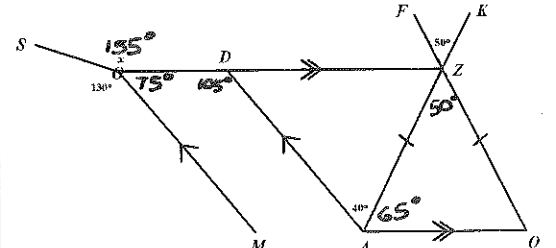
$B\hat{O}M = 90°$ ✓
(diags of rhombus)
$O\hat{B}M = 40°$
(∠s opp. = sides; ...)
∴ $6p + 11 + 40 + 90 = 180°$
∴ $6p + 141° = 180°$
∴ $6p = 39°$ ✓
∴ $p = 6\frac{1}{2}$ ✓ (4)

e)
$T\hat{G}R = p + 20°$ ✓
(∠s opp. = sides; TR = RG)
$3p + 10° + p + 20° + p + 20° = 180°$
(∠ sum in △TRG) ✓
∴ $5p + 50° = 180°$
∴ $5p = 130°$ ✓
∴ $p = 26°$ ✓ (4)

QUESTION 8:

$A\hat{Z}Q = 50°$ (vert opp ∠s =) ✓
$Z\hat{A}Q = 65°$ (∠ sum △ZAQ & ∠s opp = sides; ZA = ZQ) ✓
$O\hat{B}A = 105°$ (alt ∠s; OB ‖ AQ) ✓
$M\hat{O}Z = 75°$ (co-int. ∠s; MO ‖ AD) ✓
$x = 155°$ (∠s around pt. O) ✓

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