Mark schemes

Q1.

An angle of [38, 42]

Condone not at A

M1

An angle of [53, 57]

Condone not at B

M1

AC and BC drawn on AB = 12 cm with an angle of [38, 42] at A and an angle of [53, 57] at B

*ft AC and BC drawn on AB = 12 cm with an angle of [38, 42] at A **or** an angle of [53, 57] at B*

A1ft

[3]

Q2.

Intersecting arcs on both sides of line joining sockets, of same radius centred on each socket

M1

Perpendicular bisector of sockets within tolerance (at least 3 cm long)

Tolerance is ± 1mm through their intersecting arcs.

A1

Point marked on wall 2 cm from fireplace on either side

B1

Socket marked on bottom wall where their perpendicular bisector does intersect the wall.

This mark is for showing that the socket can only be fitted on the bottom wall. If both positions marked then A0.

A1

[4]

Q3.

Isosceles triangle with base on 9 cm line and vertex within 2 mm (ie in the circle on the overlay)

B1 for any isosceles triangle on the base with vertex within 2 mm of centre line
or
B1 for any side 7.5 cm long ± 2 mm
or any arc 7.5 cm drawn ± 2 mm
or 7.5 (cm) seen

B2

No **and** 1.2 (m) or 120 (cm)

ft the vertical height of their triangle

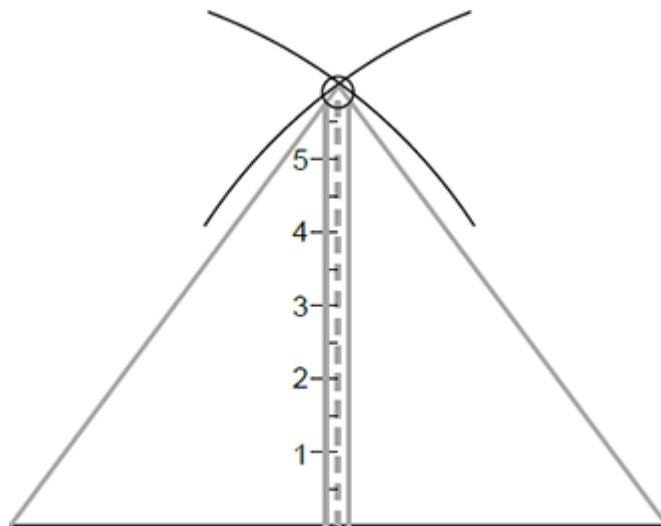or

No and 6 (cm) **and** 6.4 (cm)

Jack's height accurately drawn ± 2 mm on diagram and a decision stated
or
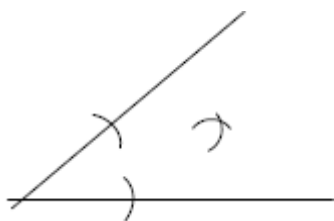*Vertical height of their triangle may be stated and compared to Jack's scale height ie [6.2, 6.6]*

B1ft

[3]

Q4.

Arc(s) centred on A of lengths within 1 cm of each other crossing both lines, and intersecting arcs centred on the intersection points

M1

Angle bisector from A within tolerance

Must score the M to get the A

A1

Additional Guidance
Must see arcs on rays, ie no dots as can be measured with a ruler
Note that using bottom ray as length of arc will have just one arc about 2mm from end of oblique ray. This is same as 'two arcs'.

[2]

Q5.

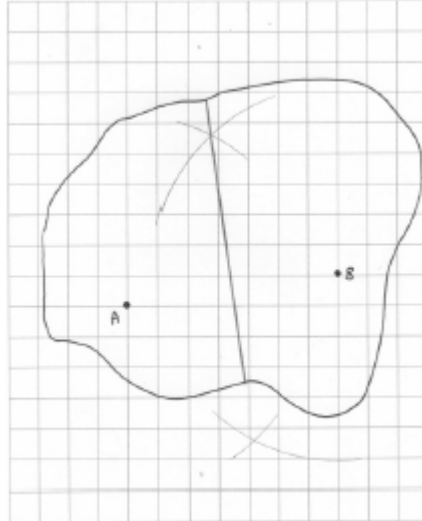A pair of intersecting arcs of equal radii from ends of line with two intersections

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oe

M1

Perpendicular line drawn through points of intersection
1 mm tolerance
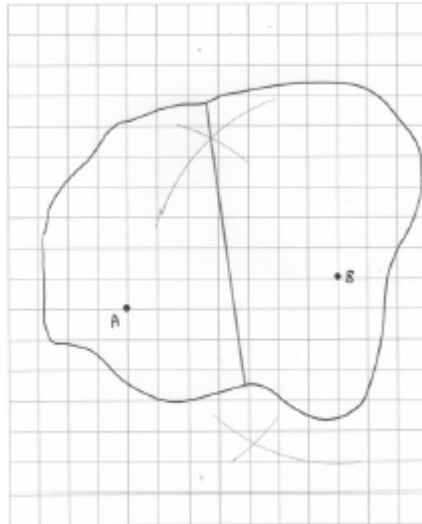
A1

[2]

Q6.

Two pairs of intersecting arcs with equal radii from centres *A* and *B*

M1

Straight line between the intersecting arcs (may go outside the island and/or not be all the way across the island)

A1

Line goes all the way across the island but no further

Must have gained M1

ft their line

Strand (ii) Accurate interpretation of context

SC1 Line in tolerance but no arcs

Q1ft

[3]

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Q7.

(a)   (*AB* =) [9.8, 10.2] (cm) **or**
(1 cm represents)
[24.5, 25.5102041] (metres)

> *oe eg [3.9,4.1] inches*
>
> *May be seen on diagram*

M1

(*AC* =) 175 ÷ 250 × their [9.8, 10.2]
(= [6.86, 7.14] (cm))

> *oe eg 175 ÷ their [24.5, 25.5102041]*
>
> *(= [6.86, 7.14] (cm))*
>
> *May be seen on diagram*

M1

AC drawn with *C* on North line through *B* with *AC* = [6.86, 7.14]

> *SC3 AC drawn with C on North line through B within tolerance shown on the overlay*

A1

(b)   Two arcs centre *P* with equal radii intersecting *PQ* and *PS*

> *oe eg single arc intersecting PQ and PS*
>
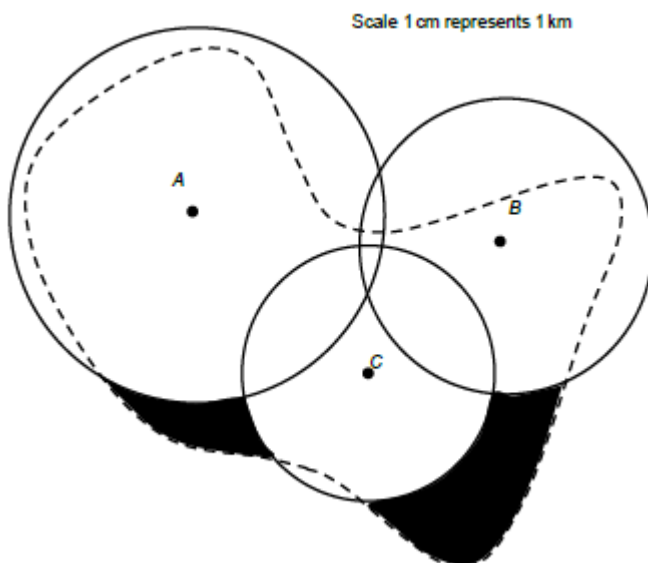> *Allow intersection at Q*

M1

Two intersecting arcs with equal radii **and** line from *P* to point of intersection

> *SC1 M0 but line within tolerance*

A1

[5]

Q8.

Completely correct
ie   Circle radius 4.5 cm centre *A*
      Circle radius 3.5 cm centre *B*
      Circle radius 3 cm centre *C*
      Shades both correct regions

Scale 1 cm represents 1 km

All radii ± 2 mm

Full circles do not have to be drawn but arcs inside the town must be seen

*B3 3 circles correct **and** only 1 correct*

   region shaded (no incorrect regions)

   or

   *3 circles correct **and** both correct*

   *regions shaded **and** one extra region shaded*

   or

   *2 circles correct **and** 1 incorrect **and***

   correct ft regions shaded

B2 3 circles correct with no or incorrect

   shading

   or

   *2 circles correct **and** 1 incorrect **and***

   *correct ft regions shaded **and** one extra*

   region shaded

   or

   *1 circle correct **and** 2 incorrect **and***

   correct ft regions shaded

   or

   *2 circles correct **and** none incorrect **and***

   correct ft regions shaded

*B1 3 incorrect circles **and** correct ft regions shaded*

   or

   At least 1 circle correct

B4

[4]

Q9.

Fully correct construction with circle in tolerance and all arcs shown

B3 Fully correct except using one pair of arcs and midpoint to construct perpendiculars

B3 Perpendiculars fully correct with arcs intersecting in two places and no circle or circle out of tolerance

B2 Using one pair of arcs and midpoint to construct perpendiculars, no circle or circle out of tolerance

B2 No arcs, two perpendiculars correct and circle in tolerance

B2 One perpendicular fully correct with arcs intersecting in two places

B1 No arcs, two perpendiculars correct and no circle or circle out of tolerance

B4

[4]

Q10.

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(a)   2 or 2.0

B1

(b)   Circular arc drawn centre post

M1

Fully correct arc radius 5 cm
        ± 2 mm tolerance

A1

(c)   2 cm = 1 metre
        Any equivalent scale

or 1 cm = 0.5 metre
        Condone 1 square = 0.5 metre

M1

1 cm = 50 cm or 2 cm = 100 cm
        Any order

or 2 : 100
        Common units

M1

1 : 50
        50 : 1 implies M1M1A0

A1

[6]

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