M1.

One continuous arc, centre *A*, intersecting *AB* and *AD*
or
Two arcs, each with same radius and centre *A*, intersecting *AB* and *AD*

        Allow ± 2 mm for radii

                                        M1
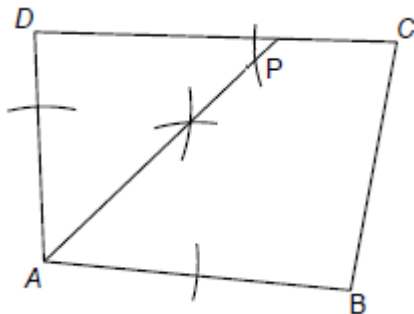
Intersecting arcs with same radius and centres at the intersections with *AB* and *AD*
and
angle bisector drawn

        Allow ± 2 mm for radii
        The radius of these arcs need not to be the same as those used for M1

                                        M1

Arc of radius [5.8, 6.2] cm, centre *C*, intersecting their angle bisector and *P* labelled

        SC1 Arc of radius [5.8, 6.2] cm, centre C with no angle bisector attempted

                                        B1ft

                                               [3]

M2.

Arc drawn from intersection of wall and fence cutting wall and fence
or Arc drawn from D radius hedge length

                                        M1

Complete angle bisector with all construction arcs

                                        A1

Point marked in correct place, with all arcs for both constructions shown

        May be indicated by intersection of angle bisector and arc
        SC1 Point marked in correct place but no arcs

                                        A1

Additional Guidance
Tree need not be labelled

[3]

M3. Fully correct locus

> *B2 for two correct straight lines or two correct semi-circles*
> *or one correct straight line and one correct semicircle*
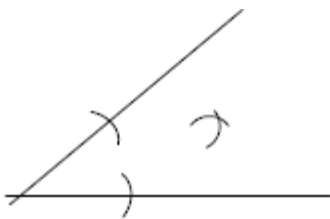> *B1 for one correct straight line*
> *or one correct semicircle*
> *B1 for correct shape but incorrect size*

B3

[3]

M4. 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]

M5. 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)

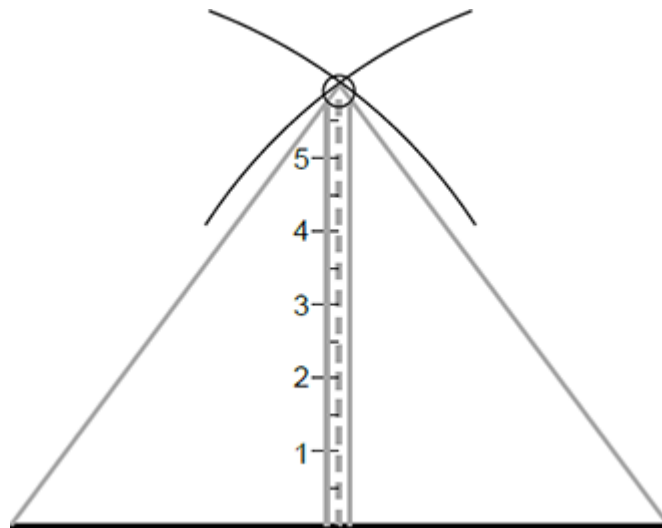*ft the vertical height of their triangle*

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]

M6. 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]

M7.(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]

M8. 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]

M9. Triangle is correct with two equal arcs seen for angle of 60

B2 Triangle correct but no arcs

B2 Fully correct constructions (3rd side missing)

B1 for either AB = [7.4, 7.6]
or   AC = [6.2, 6.4]
or   60°

B3

[3]