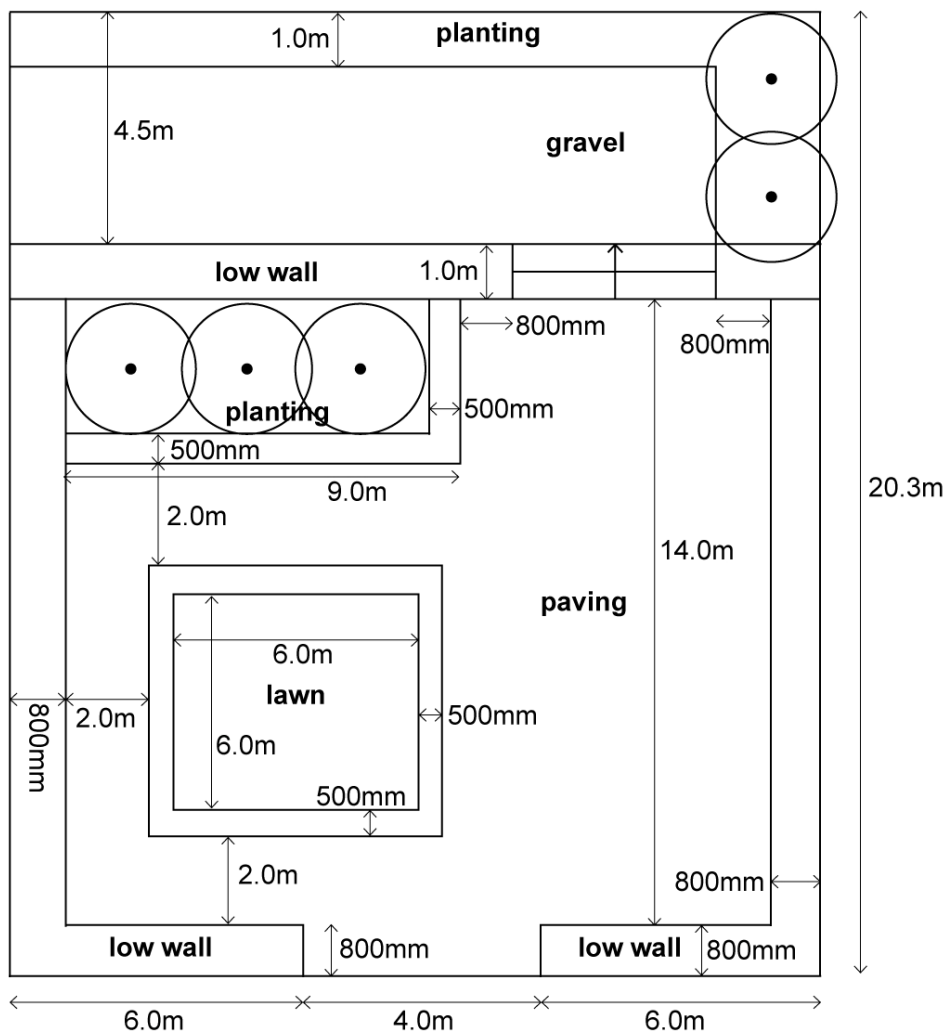


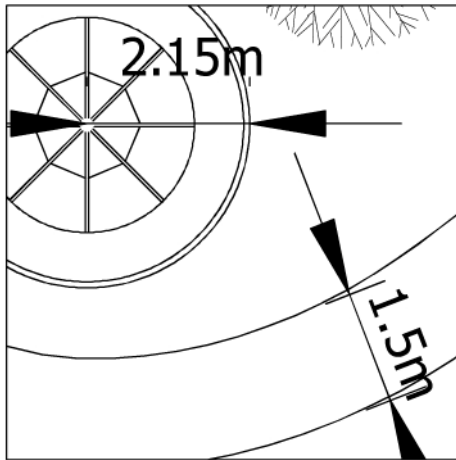
Question 1: Drawing to scale

- 1.1. On a clean page in your answer booklet, draw the sketch below at **1:100**. The sketch below is not to scale, therefore this question is testing your ability to draw a plan to scale as neatly and as accurately as possible. It is not necessary to show dimensions. Leave space for a title block (see question 1.5 below). (20)
- 1.2. Draw the 5 (five) tree canopies in plan, with a diameter of 2.5m. (3)
- 1.3. On the lawn area, draw a plan of a table that is 3m long and 1.6m wide and a bench that is 2000mm long and X 500mm wide. (4)
- 1.4. Draw a plan of a 3.0m X 3.6m tool shed in the gravel area. (2)
- 1.5. On the same page as the drawing, design a title block for the drawing. The title block must include a scale bar, north arrow, drawing title, date and your name. All lettering must be neat and correctly annotated. You can assume north is at the top of your page. (5)

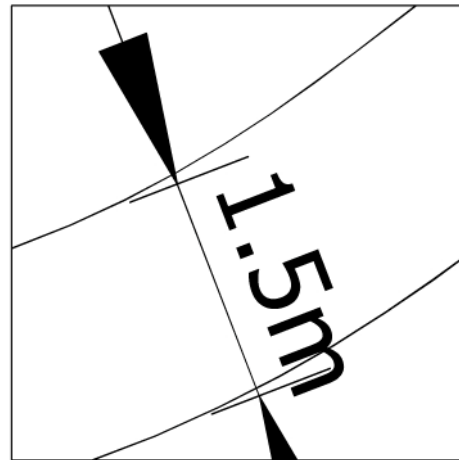


Question 2: Measuring scale

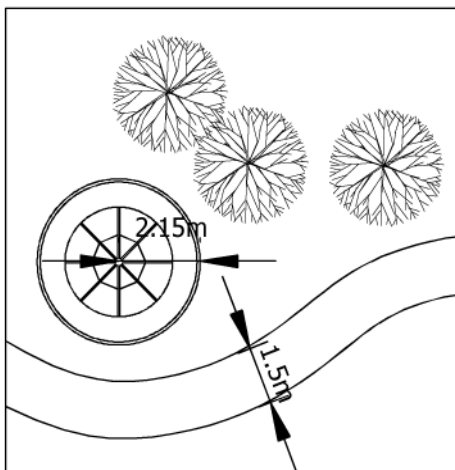
2.1. What scale are the following drawings? Number your answers a – d. (8)



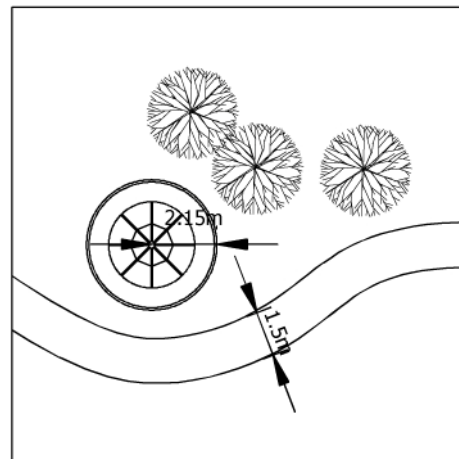
a



b



c



d

2.2. Of the three (3) scales below, which one would be considered a “large” scale? (2)

(a) 1:5000

(b) 1:10

(c) 1:100

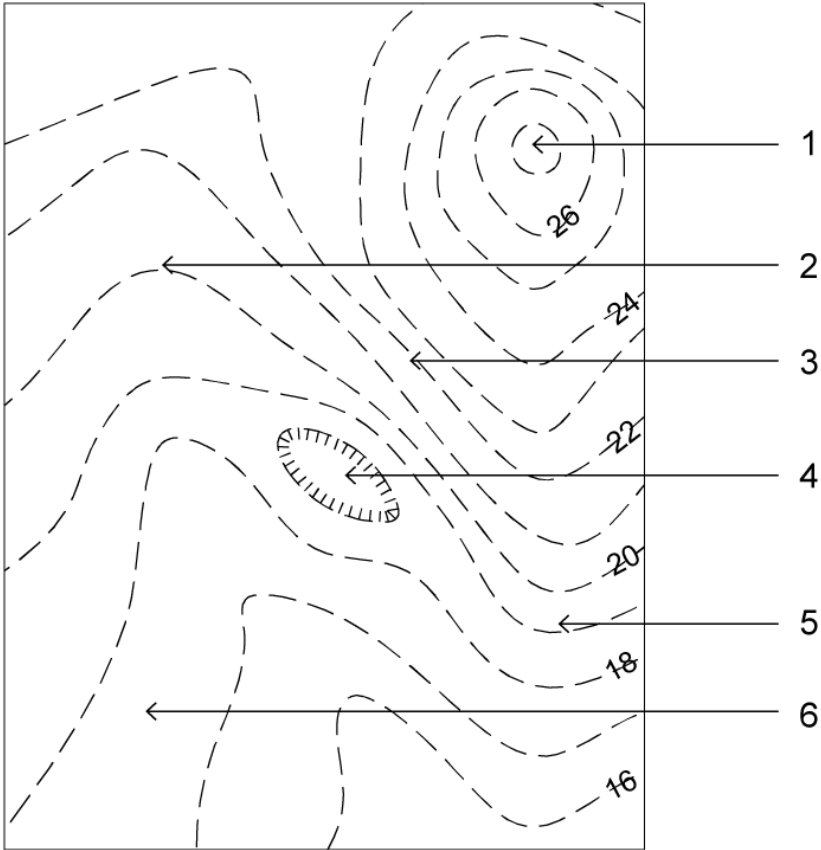
2.3. Rewrite the following sentence and complete the missing words: (2)

1:250 means that ___(a)___ unit on plan represents ___(b)___ units on site.

Question 3: Topography

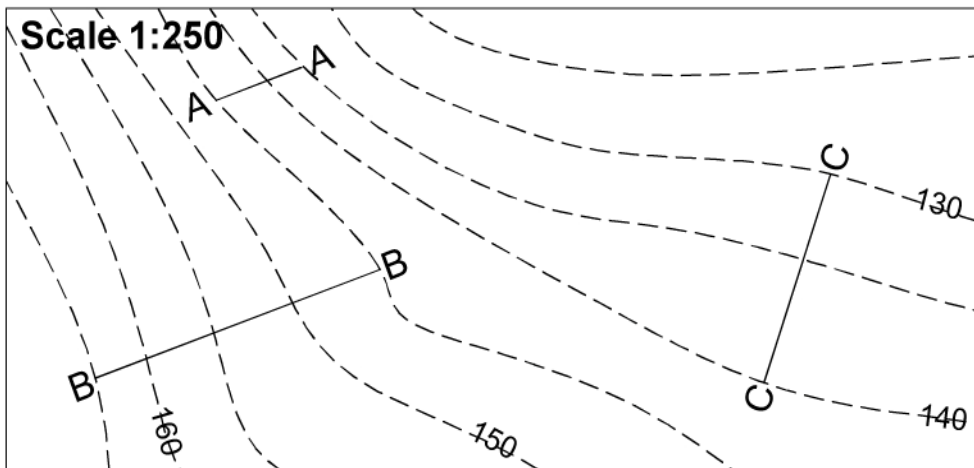
3.1. Provide labels for numbers 1 – 6 from the list below: (6)

- | | | | |
|-------------|------------|------------|----------------|
| Ridgeline | Peak | Valley | Steep slopes |
| Flat slopes | Depression | Erf number | Urban edgeline |



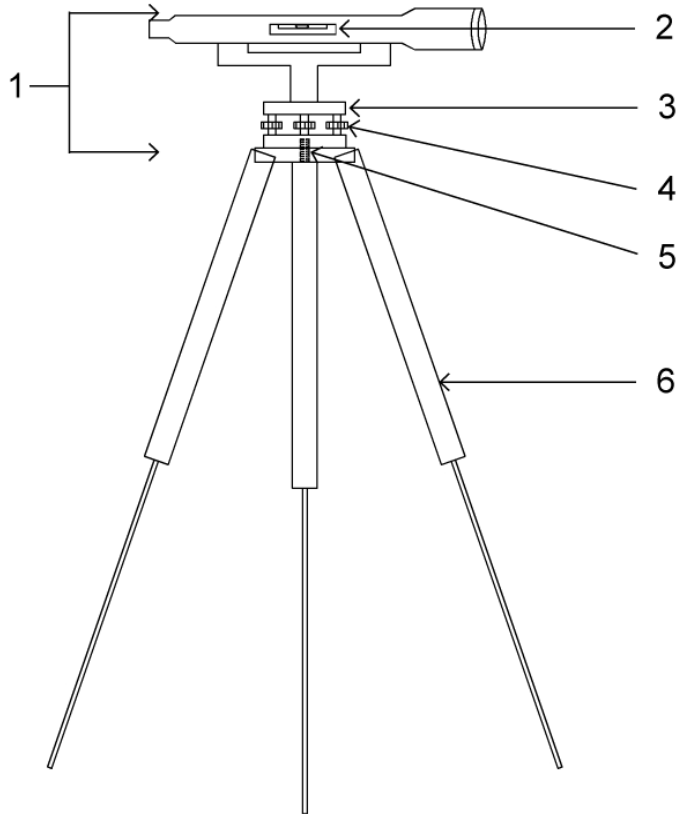
Question 4: Gradient

4.1. Calculate the gradient for the sections A-A, B-B and C-C as indicated. (12)
Please show all working out as you will be marked on your formula and calculations.

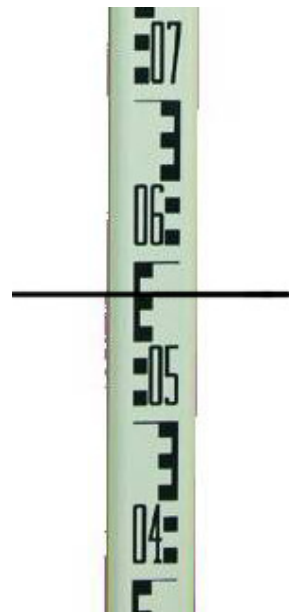


Question 5: Levelling

- 5.1. Label the diagram below. Write numbers 1 – 6 in your answer book and provide a label for each number. (6)

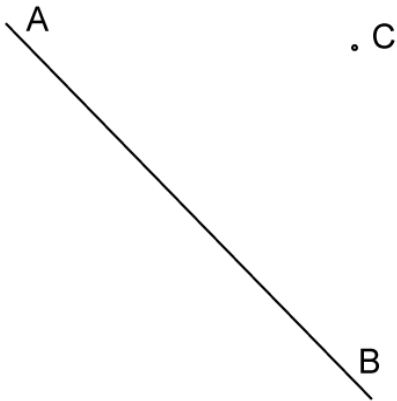


- 5.2. How does one eliminate parallax when levelling? (3)
- 5.3. What are 4 important steps to note when setting up a dumpy level? (4)
- 5.4. What is the reading at the line on the levelling staff? (2)



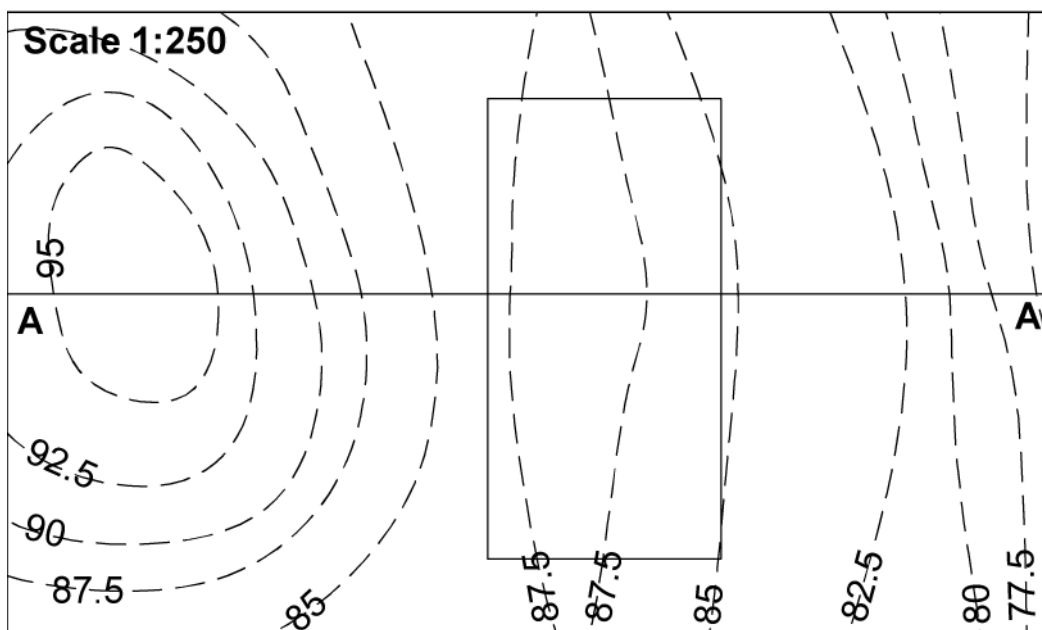
Question 6: Surveying

- 6.1. In your answer booklet, draw 3 points A, B and C as shown in the diagram below. AB is a wall and C is the centre of a tree. Describe how you would accurately measure the perpendicular distance from the centre of the tree to the wall. (5)



Question 7: Sections

- 7.1. In your answer booklet, draw Section A-A at a **scale of 1:250**, of the contour lines only. Please show all setting out lines and elevation lines. (10)
- 7.2. The rectangle in the middle of the plan is a glasshouse. Draw the glasshouse on your section you drew in 8.1. The glasshouse is 3m high and sits on contour level 85. (2)
- 7.3. Show in section only, how you would grade the slope so that the glasshouse sits on level ground. Hatch and label the areas of cut and fill. (4)



Question 8: Contour interpolation

- 8.1. Step 1: (20)
Take note of the diagram below. There are 12 points in a 4 X 3 grid. Each point has a label (spot height).

Step 2:
In your answer booklet, draw this 4 X 3 grid on your page as shown with each point **5cm apart** – please note that the drawing below is **not** to scale.
You do not need to draw the two arrows showing the 5cm measurement.

Step 3:
Label each point with the relevant spot height as shown.

Step 4:
Using contour interpolation, show the 24, 25 and 26m contour lines. You may show all working out and calculations in your answer booklet.

