

11

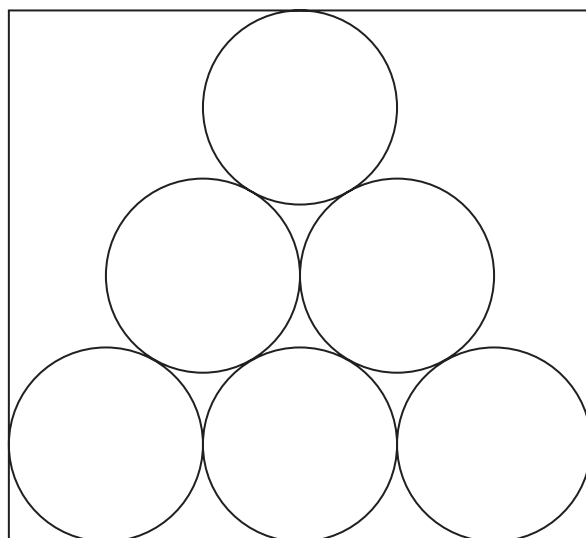


Diagram **NOT**  
accurately drawn

**Figure 4**

Figure 4 shows six identical circles inside a rectangle.  
The radius of each circle is 12 cm.

The radius of the circles is the greatest possible radius so that the circles fit inside the rectangle.

The six circles form the pattern shown in Figure 4 so that

- each circle touches at least two other circles
- the circle in the top row of the pattern and the circles in the bottom row of the pattern touch at least one side of the rectangle
- the centres of the circles all lie on the perimeter of a single triangle

Show that the total area of the six circles is almost 57.5% of the area of the rectangle.

(6)

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**Question 11 continued**

Handwriting practice area with horizontal dotted lines.



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**TOTAL FOR PAPER IS 100 MARKS**