

**Candidate Name****Candidate Number****Centre Name****Centre Number**


**Paper 2****Model Paper****(2 hours)**

It is necessary to respond on the answer sheets provided alongside this question paper. Additionally, you must have a soft pencil (preferably of type B or HB), a clean eraser, and a dark blue or black pen.

**INSTRUCTIONS:**

- You must write your name, candidate number, centre name, and centre number on the answer sheets in the designated spaces.
- Attempt all the questions from the subjective section using a dark blue or black pen.
- It is important to follow the instructions provided on the answer sheets.
- Do not use correction fluid.
- Avoid writing on any bar codes.
- You are allowed to use a calculator if needed.

**INFORMATION:**

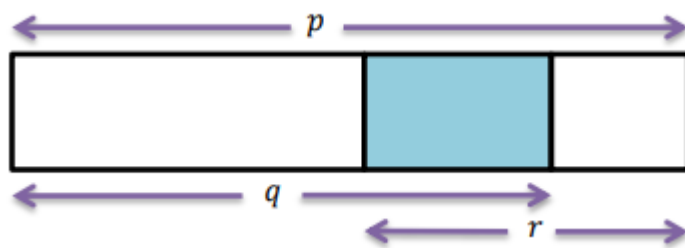
- This paper has a total of 100 marks.
- The number of marks assigned for every question or its parts is indicated within brackets ( ).
- Rough work must be completed on this question paper.

**Q. No. 1:** A group of pre-scholars has 15 boys and 12 girls.

What is the ratio of girls to boys?

**[5]**

**Q. No. 2:** Find a formula for the length of the blue part below, in terms of  $p$ ,  $q$ , and  $r$ .



[5]

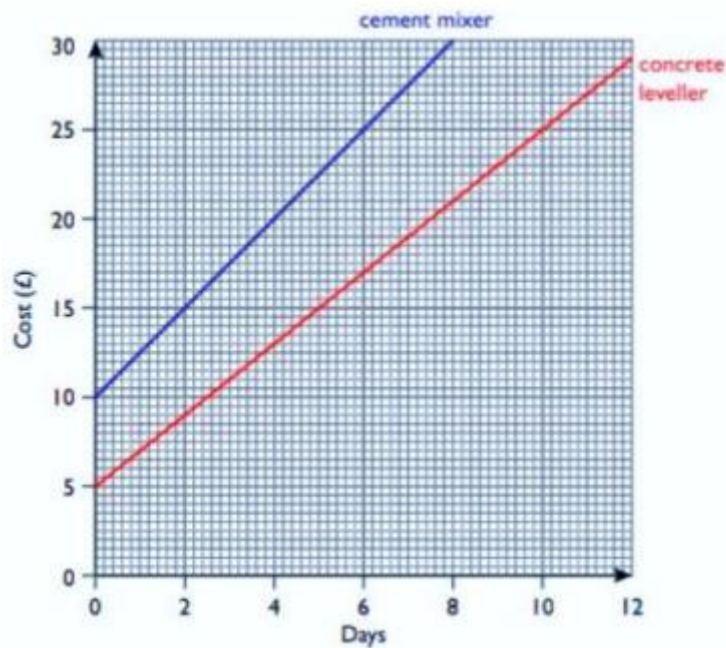
**Q. No. 3:** Give the recursive formula for a geometric sequence. Find the common ratio, the first five terms, and the explicit formula.

**a)**  $a_n = a_{n-1} \cdot 2$  ( $a_1 = 2$ )

**b)**  $a_n = a_{n-1} \cdot -3$  ( $a_1 = -3$ )

**[10]**

**Q. No. 4:** Here is a graph showing the costs of hiring a cement mixer and a concrete leveller.

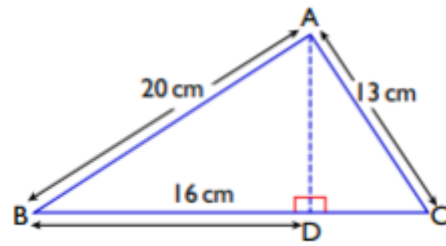


**a)** Find the difference in the daily rate of hiring each item of equipment.

**b)** Find the equations of the two graphs.

**[10]**

**Q. No. 5:** In this diagram, find.



- a) Then length  $CD$ .
- b) The perimeter of the triangle  $ABC$ .
- c) The area of the triangle  $ABC$ .

**[10]**

**Q. No. 6:** For each shape find **a)** the perimeter. **b)** the area.

All lengths are in cm. Use the button on a calculator or take  $\pi = 3.142$ .

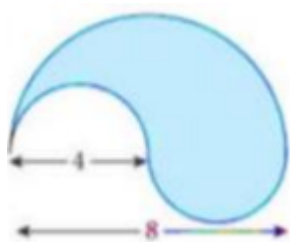
a)



c)



b)

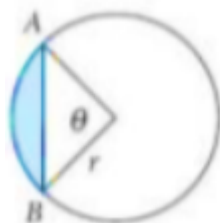


[15]

**Q. No. 7:** Find  $\theta$  and hence the blue shaded area when:

**a)** when  $AB = 10\text{cm}$ ,  $r = 10\text{cm}$ .

**b)** when  $AB = 8\text{cm}$ ,  $r = 5\text{cm}$ .



**[10]**



**Q. No. 8:** When 3 of the oil is removed from an upright cylindrical can, the level falls by 10cm. Find the radius of the can.



[5]

**Q. No. 9:** Copy and Complete:

a)  $7\text{cm}^3 = \underline{\hspace{2cm}}\text{mm}^3$

b)  $3\text{ tonne} = \underline{\hspace{2cm}}\text{kg}$

c)  $0.6\text{g} = \underline{\hspace{2cm}}\text{mg}$

[9]

**Q. No. 10:** Calculate:

- a)** The area of an equilateral triangle of side 6cm.
- b)** The area of a regular hexagon of side 6cm.
- c)** The volume of a regular hexagonal prism of length 10cm, where the side of the hexagon is 12cm.

**[9]**

**Q. No. 11:** A red, a blue, and a green dice are all thrown at the same time.

Display all the possible outcomes suitably. Find the probability of obtaining:

- a)** A total of 18 on three dice.
- b)** A total of 4 on the three dice.
- c)** A total of 10 on three dice.
- d)** A total of 15 on the three dice.
- e)** A total of 7 on the three dice.
- f)** The same number on each dice.

**[12]**