



Candidate Name

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Candidate Number

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Centre Name

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Centre Number

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Paper 1 (Mathematics)

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: Answer the following questions. [11]

(i) Evaluate the following:

(a) $15 - 5 \times (7 - 5) \div 4 + 9$ [2]

(b) $11 + 88 \div (1 + 1) \times 11$ [2]

(ii) Find the greatest number of 5-digits on being divided by 9, 12, 24 and 45 leaves 3, 6, 18, and 39 as remainders respectively. [2]

(iii) How many significant digits are there in each number?

(a) 10203005 [1]

(b) 23.0561 [1]

(iv) Complete the table to show equivalent fractions and percentages. [3]

Fraction	Percentage
$\frac{1}{2}$	
	43%
$\frac{5}{2}$	

Q. No. 2: Answer the following questions. [12]

(i) A bus can be early, on time, or late.

The probability that the bus is early is 0.1.

The probability that the bus is on time is 0.6.

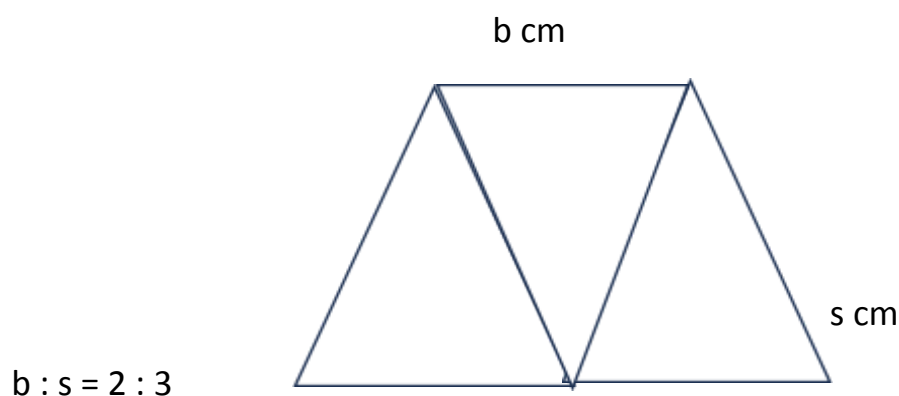
Work out the probability that the bus is late. [2]

(ii) A sequence has three terms.

The term-to-term rule for the sequence is “multiply by 8 and then add 1”. [2]

(iii) Use 2 gallons = 9 litres to convert 17 gallons into litres. [2]

(iv) This diagram shows the same trapezium.



Work out an expression, in terms of b , for the perimeter of the trapezium. [2]

(v) A coin is thrown 50 times. It lands on heads 31 times.

(a) Write down the relative frequency it lands on heads. [2]

(b) Raj says, "The coin is biased towards heads."

Use the data to give a reason why he might be correct. [2]

Q. No. 3: Evaluate the following. [10]

(i) (a) $\cos x = -\cos 60^\circ$ [2]

Work out the value of x when $180^\circ \leq x \leq 360^\circ$.

(b) $\cos x = \cos 60^\circ$ [2]

Work out the value of x when $90^\circ \leq x \leq 360^\circ$.

(ii) Calculate the number of sides of a regular polygon whose interior angles are each 156° . [2]

(iii) Lucy swims 500km in 2 hours and 20 minutes. Calculate her speed in:

a) Metres per second. [2]

b) Kilometres per minute. [2]

Q. No. 4: Solve the following. [10]

(i) A student flips a fair coin and rolls a fair four-sided dice.

The coin can land on heads (H) or tails (T).

The dice have sides numbered from 5 to 8.

(a) Complete this table to show all the possible outcomes. [2]

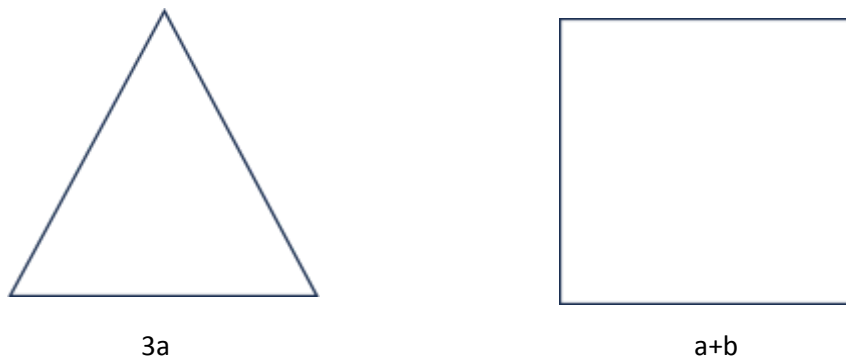
	5	6	7	8
H			H7	
T				

(b) Find the probability of getting a tail with an even number.

Give your answer as a fraction in its simplest form. [2]

(ii) In this question, all lengths are in centimetres.

The diagram shows an equilateral triangle and a square.

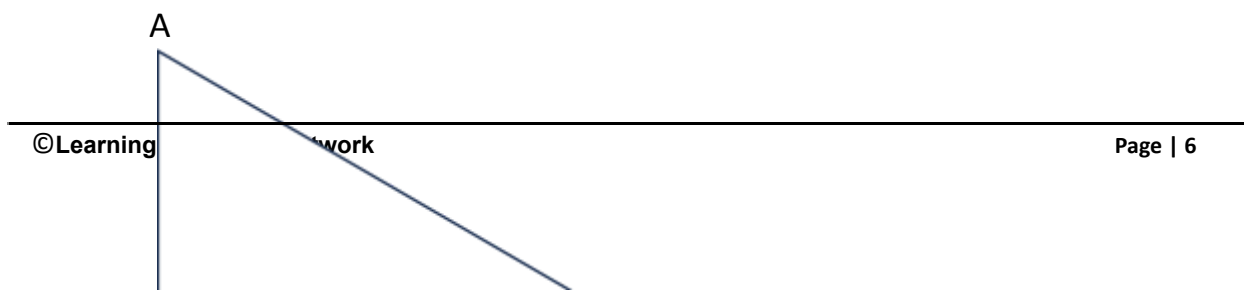


The perimeter of each shape is 36 cm.

Find the value of b .

[3]

(iii) In the diagram below, AE and BD are straight lines.



B

D

C

E

Show that triangles ABC and EDC are similar.

[3]

Q. No.5: Evaluate the following.

[12]

(i) $4x + 3y = 5$

$2x + 3y = 1$

[3]

(ii) A truck is used to transport some wood panels.

Each wood panel is a cuboid measuring 2.4 m by 1.2 m by 1.8 cm.

The density of each wood panel is 750 kg/m³.

The truck can carry 15 tonnes of these wood panels.

Calculate the maximum number of wood panels that the truck can carry.

Show how you decide.

[6]

(iii) y is inversely proportional to the square root of x . y is 40 when x is 9.

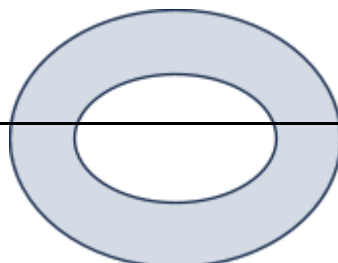
Find a formula linking x and y .

[3]

Q. No. 6: Briefly discuss about following questions.

[10]

(i) A circular pond of radius 6 is surrounded by a path of width 1m.



a) Find the area of the path. [3]

b) The path is resurfaced with astroturf which is bought in packs each containing enough to cover an area of 7m^2 . How many packs are required? [4]

(iii) A prism has a volume of 100 and a length of 8. If the cross-section is an equilateral triangle, find the length of a side of the triangle. [3]

Q. No. 7: Answer the following: [15]

(i) Two dice and two coins are thrown at the same time.

Find the probability of obtaining.

a) Two heads and a total of 12 on the dice. [3]

b) A head, a tail, and a total of 9 on the dice. [3]

c) Two tails and a total of 3 on the dice.

What is the most likely outcome? [3]

(ii) Evaluate the following:

(a) $81^2 - 80^2$ [3]

(b) $6m + 4n - 9km - 6kn$ [3]

Q. No. 8: Solve the following.

[13]

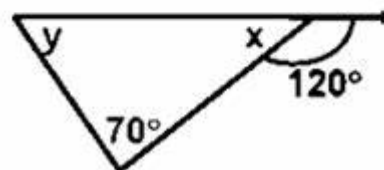
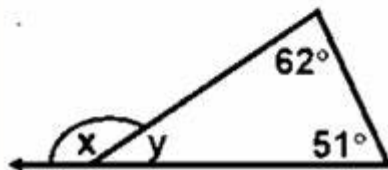
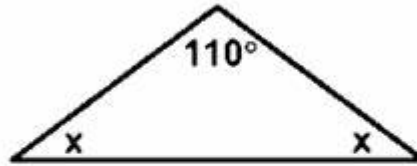
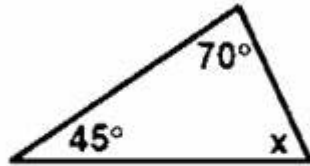
(i) A golf ball has a diameter of 41 and the surface has 150 dimples of radius 2mm. Calculate the total surface area which is exposed to the surroundings. (Assume the dimples are hemispherical.)

[5]

(ii) Solve the following.

[8]

**Find the missing angles in
the following triangles**



Q. No. 9: Calculate the following.

[7]

(i)



(a) What percentage of the shaded boxes are shown in the figure?

[3]

(b) Write your answer as a decimal.

[1]

(ii) Solve.

[3]

$$2x + 5y = 24$$

$$4x + 3y = 20$$