



SEKOLAH BUKIT SION

IGCSE Mock Examination 2021

STUDENT
NAME

EXAM
NUMBER

CENTRE
ID NO.

0580 MATHEMATICS (PAPER 2)

SET A

Year 10/Year11

06 April 2021

1 hour 30 minutes

Additional Materials:

- Scientific Calculator
- Ruler
- Graphing Paper

READ THESE INSTRUCTIONS FIRST

Write your name, exam number and grade on all the work you hand in.

Write in dark blue or black pen.

Use an HB pencil for any diagrams or graphs.

Do not use staples, paper clips, glue or correction fluid.

Answer **all** questions.

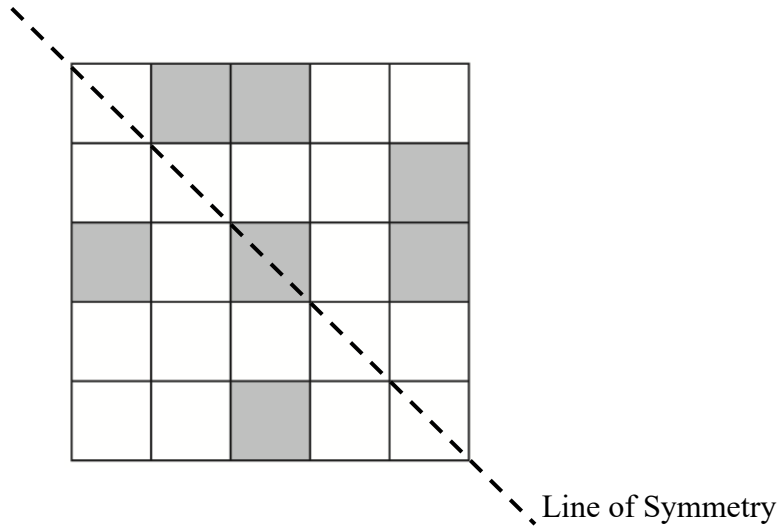
At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [] at the end of each question or part question.

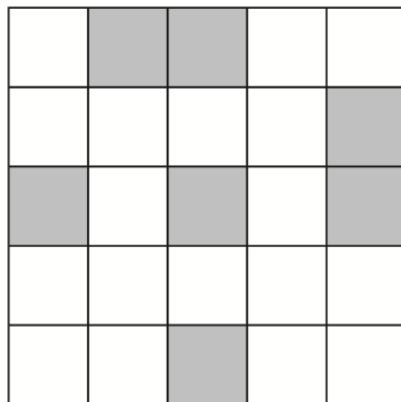
The total of the marks for this paper is 70.

Score :

- 1 (a) Mark two more squares with “X” so that this grid has **line of symmetry** as drawn. [1]



- (b) Mark two more squares with “X” so that this grid has **rotational symmetry of order 4**. [1]



- 2 8 3 5 8 7 8

From the list of numbers, write down

- (a) the mode,

Answer: [1]

- (b) the median,

Answer: [1]

- (c) the mean.

Answer: [1]

3 Estimate the following as specified.

(a) 0.047883 correct to 2 significant figures

Answer: [1]

(b) 1096 correct to 3 significant figures

Answer: [1]

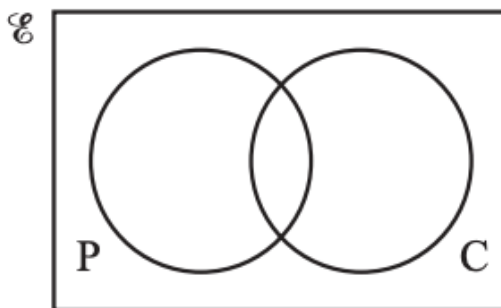
4 **Without using a calculator**, estimate, by rounding each number correct to 1 significant figure,

$$\frac{\sqrt{104.3}}{8.72 - 7.389}$$

You must show all your working.

Answer: [2]

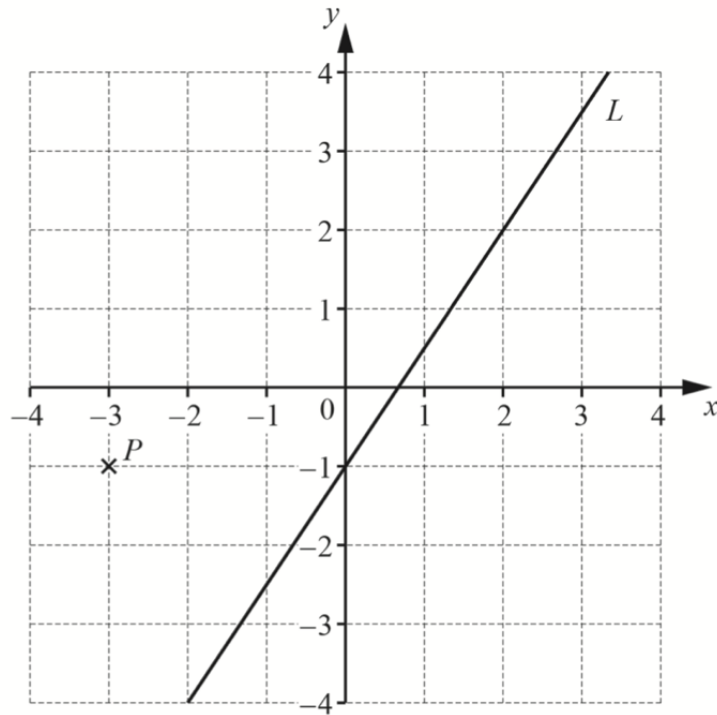
5 There are 30 students in a class.
20 study Physics, 15 study Chemistry and 3 study neither Physics nor Chemistry.



What is the probability that a student chosen at random studies both Chemistry and Physics?

Answer: [2]

6 The diagram shows a point P and a line L .



(a) Write down the coordinates of point P .

Answer: [1]

(b) Write down the equation of the line L in the form $y = mx + c$.

Answer: [2]

7 Write the following numbers in standard form.

(a) 640 000

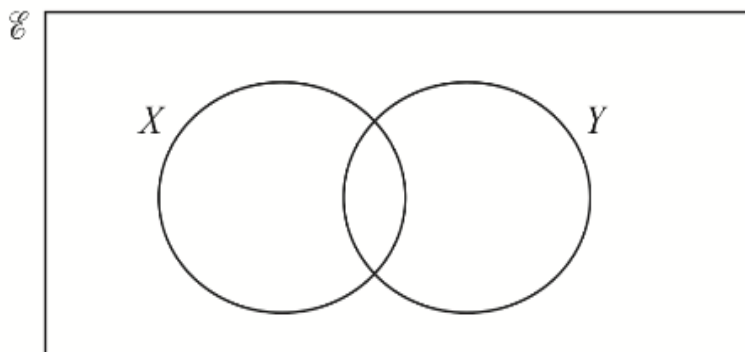
Answer: [1]

(b) 0.0061

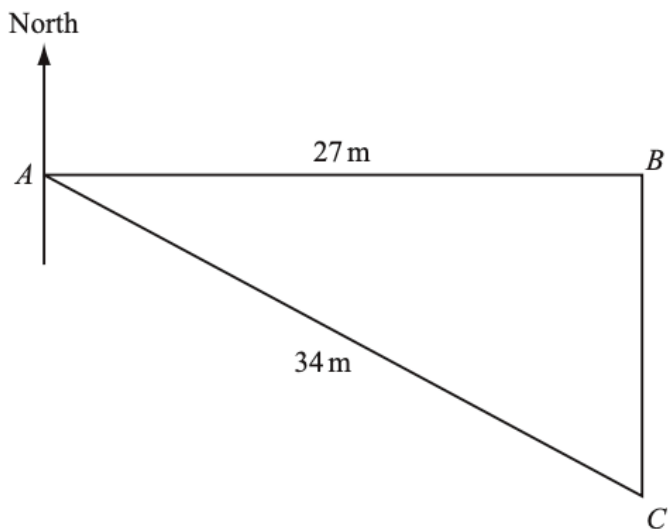
Answer: [1]

8 In the Venn diagram, shade $X' \cap Y$.

[1]



9 In the diagram, B is 27 metres due east of A .
 C is 34 metres from A and due south of B .



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(a) Using trigonometry, calculate angle BAC .

Answer: [2]

(b) Write down the bearing of C from A .

Answer: [1]

- 10** Expand and simplify.
 $(x + 1)(x + 2) + 2x(x - 3)$

Answer: [3]

- 11** A flag cost \$15 to make.
Soraya sells one flag for \$21.

Calculate the percentage profit.

Answer: [3]

- 12** Simplify, with positive indices.

(a) $\left(\frac{x^3}{8}\right)^{-\frac{4}{3}}$

Answer: [3]

(b) $5m^2 \times 2m^3$

Answer: [1]

- 13** Solve the equation $3(2x - 4) = 4(x + 7)$.

Answer: [3]

- 14** y is directly proportional to $(x - 1)^2$.
When $x = 3, y = 24$.

Find y when $x = 6$.

Answer: [3]

- 15** The amount of fuel, t litres, in a boat's fuel tank is 135 litres, correct to the nearest litre.
Complete the statement about the value of t .

Answer: $\leq t <$ [2]

- 16** Solve the simultaneous equations.
You must show all your working.

$$5x + 8y = 4$$
$$\frac{1}{2}x + 3y = 7$$

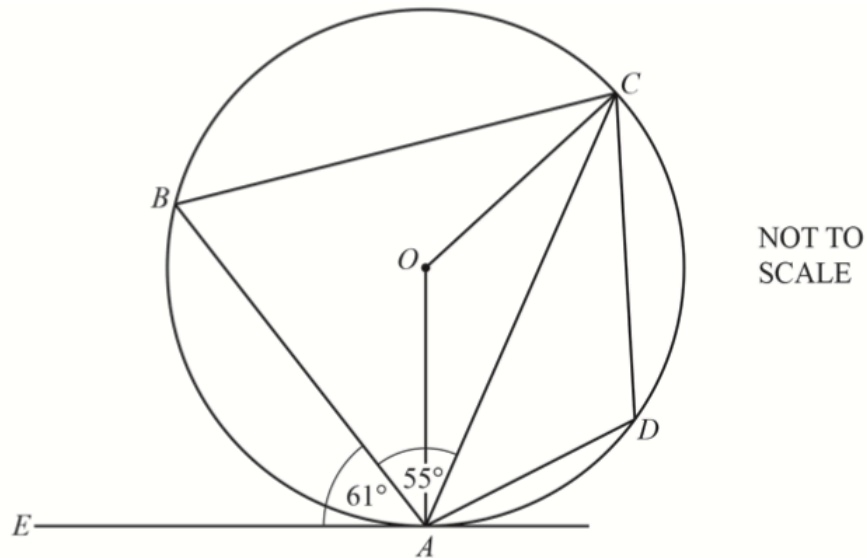
Answer: [4]

- 17 The distance between Prague and Vienna is 254 kilometres.
 The local time in Prague is the same as the local time in Vienna.
 A train leaves Prague at 15 20 and arrives in Vienna in 19 50 the same day.

Calculate the average speed of the train, in km/h.

Answer: [2]

- 18 In the diagram, A, B, C and D lie on the circle, centre O .
 EA is a tangent to the circle at A .
 Angle $EAB = 61^\circ$ and angle $BAC = 55^\circ$.



- (a) Find angle BAO .

Answer: [1]

- (b) Find angle AOC .

Answer: [2]

- (c) Find angle ABC .

Answer: [1]

- (d) Find angle CDA .

Answer: [1]

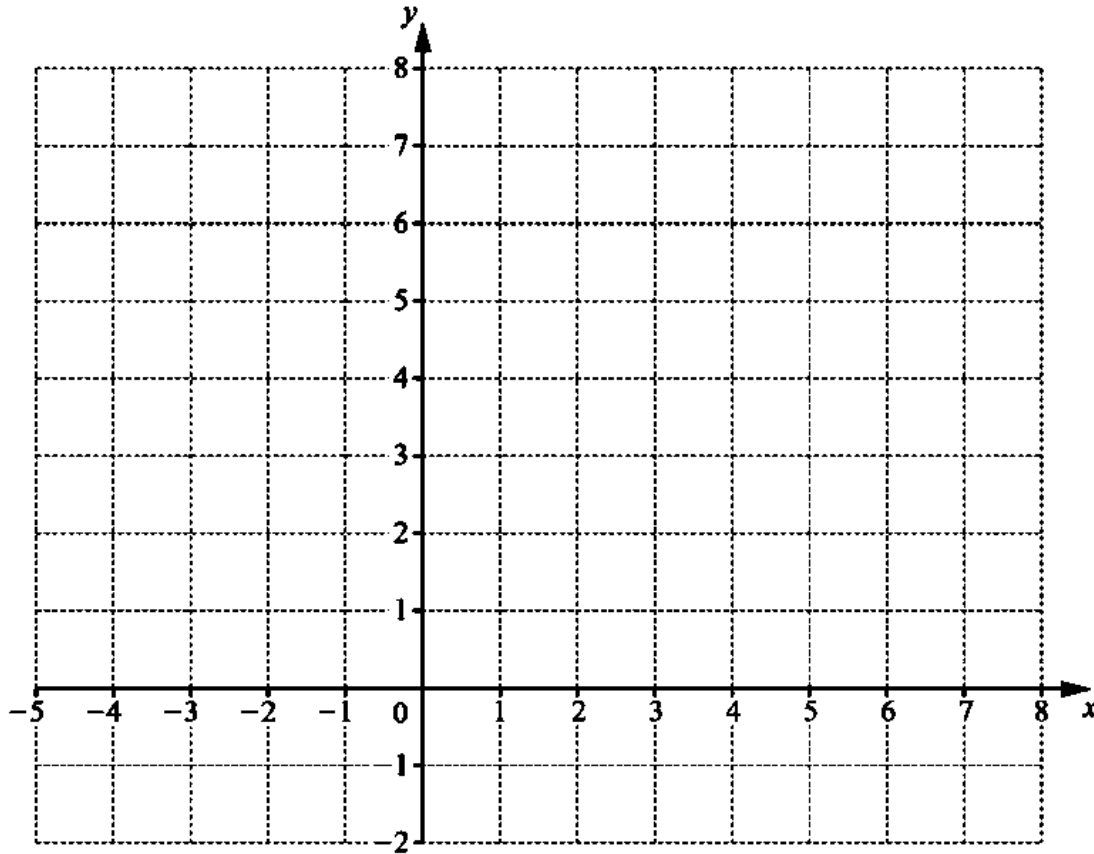
- 19 By shading the **unwanted** regions of the grid, draw and label clearly the region R which satisfies the following three inequalities.

$$y \leq 2$$

$$x < 3$$

$$y \leq x + 4$$

[5]



20

1

2

3

4

5

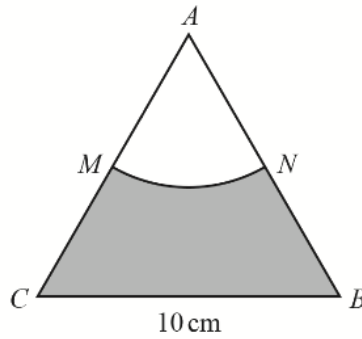
The diagram shows five cards with each numbered as 1, 2, 3, 4 and 5. Jessie draws a card randomly.

Find the probability that the card drawn does not show a prime number.

Answer: [2]

- 21 The diagram shows an equilateral triangle ABC with sides of length 10 cm. AMN is a sector of a circle, centre A . M is the midpoint of AC .

Work out the area of the shaded region.

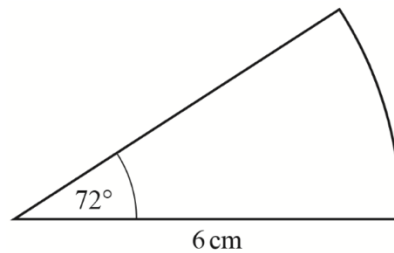


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Answer: [4]

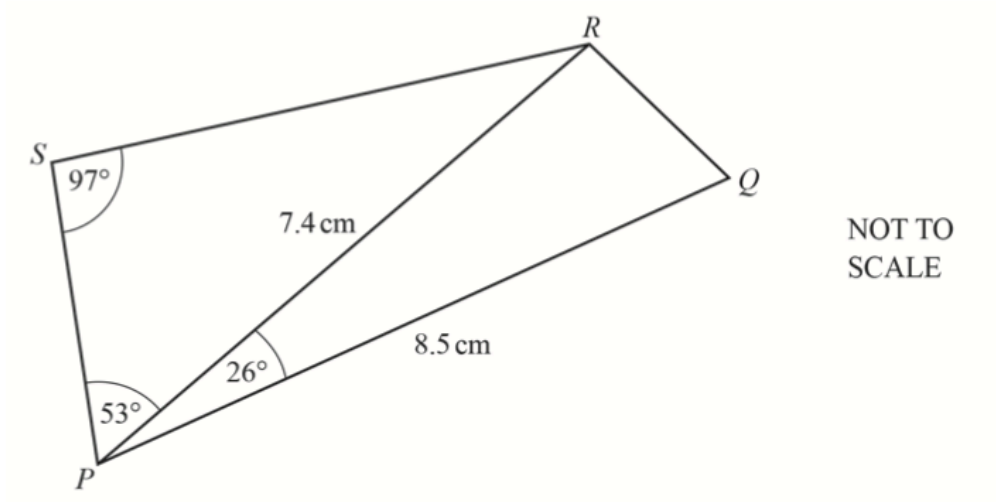
- 22 The diagram shows a sector of a circle with radius 6 cm and a sector angle of 72° . The perimeter of this sector is $(p + q\pi)$ cm.

Find the value of p and of q .



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Answer: [3]



Calculate

(a) SR ,

Answer: [3]

(b) RQ .

Answer: [4]

- END OF EXAMINATION -