

NOTES

DATE:



SEPTEMBER HOLIDAY REVISION

SEC 1 MATH

Instructions:

Please complete your
Mock Exam Paper
under timed conditions
and bring it for class.





**END OF YEAR MOCK EXAMINATION
SECONDARY 1
BASED ON 2024 SEAB SYLLABUS**

MATHEMATICS

Paper 1

4048/01

September 2024

75 minutes

READ THESE INSTRUCTIONS FIRST

Write in dark blue or black pen.

You may use HB pencil for any diagrams or graphs.

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

Answer **all** the questions.

Give non-exact numerical answers correct to 3 significant figures, or 1 decimal place in the case of angles in degrees, unless a different level of accuracy is specified in the question.

You are expected to use an approved scientific calculator.

Unsupported answers from a scientific calculator are allowed unless a question specifically states otherwise.

Where unsupported answers from a scientific calculator are not allowed in a question, you are required to present the mathematical steps using mathematical notations and not calculator commands.

You are reminded of the need for clear presentation in your answers.

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

1. (a) By rounding of each number to 3 significant figures, estimate the value of

$$412.46 + 9.96 - 12.009$$

leaving your answers in 3 significant figures. Show all workings clearly. [2]

- (b) Simplify $5y - 2(y - 2x)$ [2]

- (c) Fully factorise the following algebraic expressions

(i) $30px - 24py$. [2]

(ii) $b(b - 3) - 2a(3 - b)$ [2]

2. Written as a product of its prime factors, $224 = 2^5 \times 7$.

(a) Find k such that $224k$ is both a perfect square and a perfect cube. [1]

(b) Express 42 as a product of its prime factors.

Give your answer in index notation. [1]

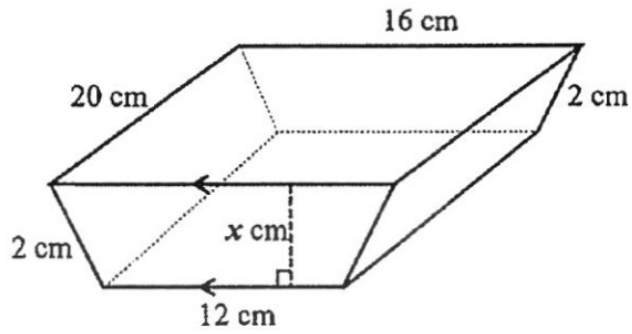
(c) Find the highest common factor of 42 and 224. [1]

(d) Two timers are set to go off at intervals of 42 minutes and 224 minutes respectively.

Given that the alarm clocks ring together at 10am, at what time will they next ring together again? [2]

3. Mr Lim drives at an average speed of x km/h for 45 minutes, and then for another 30 minutes at an average speed of $1.4x$ km/h.
- (a) Find the distance travelled, in km, for the first 45 minutes, leaving your answer in terms of x . [2]
 - (b) Find the total distance travelled by Mr Lim for the whole journey. [2]
 - (c) Given that the average speed for the entire journey was 75 km/h, form an equation in x and solve the equation. [4]
 - (d) Mr Lim claims that he will reach his destination earlier if he drove at a constant speed of 60 km/h.
Is his statement accurate? Explain your answer. [1]

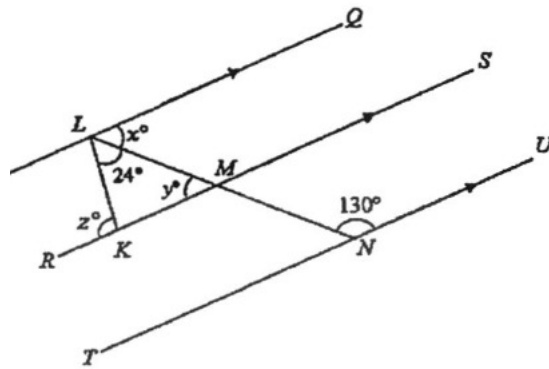
4. The figure below shows a solid metal in the form of a trapezoidal prism.



- (a) Given that the volume of the solid is 2240 cm^3 , show that $x = 8$. [2]
- (b) Calculate the cost of painting the solid if pain costs \$3 per cm^2 . [3]
- (c) The solid is melted and made into cubes of with surface area 24 cm^2 .
Calculate the maximum number of cubes that can be made. [3]

5. (a) The result of a number, when increased by 40%, is 119. Find the number. [2]
- (b) A fishmonger bought 300 fish for \$1500. Upon closer examination, he discovered that some of the fish were spoilt and cannot be sold. The fishmonger sold the remaining fish at \$7 each and made a profit of \$334. Calculate the percentage of fish that were spoilt. [3]
- (c) A vintage bag is priced at USD\$2300 in Los Angeles. Calculate how much a person needs to pay in SGD\$ if the exchange rate is SGD\$1 = USD\$0.741. Round your answer off to the nearest dollar. [2]

6. (a) Find the values of x, y and z in the diagram below, stating your reasons clearly. [5]



(b) A regular n sided polygon has an exterior angle of x° .

(i) Find an expression for n in terms of x° . [1]

(ii) If the size of the interior angle is 3 times the size of the exterior angle, find the size of the exterior angle. [2]

(iii) Hence, find n . [1]

7. The following table shows the time taken, in seconds, by 80 university students to complete a 100 metre sprint.

Time taken (t)	Frequency
$12 < t \leq 12.4$	21
$12.4 < t \leq 12.8$	18
$12.8 < t \leq 13.2$	k
$13.2 < t \leq 13.6$	14
$13.6 < t \leq 14$	12

- (a) Find the value of k . [1]
- (b) Find the number of students who took at most 13.2 seconds to complete the 100 metre sprint. [1]
- (c) A pie chart is used to represent the data in table.
Find the angle of the sector that represents the number of students who took more than 13.2 seconds but at most 13.6 seconds to complete the 100 metre sprint. [2]



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Math

Marine Parade	Thurs	4.30PM - 6.30PM
Kovan	Sat	10AM - 12PM
Bukit Timah	Sat	11AM - 1PM
Jurong East	Sun	2PM - 4PM
Tampines	Sun	2PM - 4PM

Science

Bukit Timah	Tues	4PM - 6PM
Kovan	Wed	5PM - 7PM
Tampines	Thurs	3PM - 5PM
Bukit Timah	Sat	3PM - 5PM