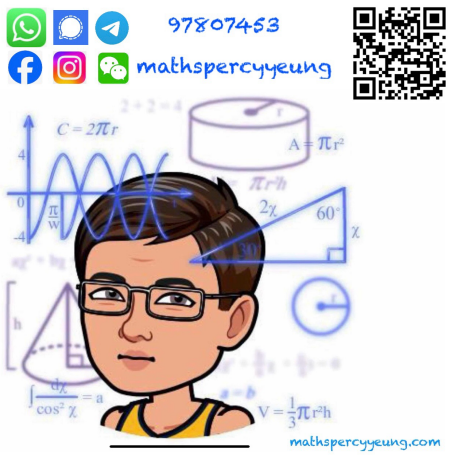
2024-2025 S3
2nd TERM UT 2
MATH

MC



2024– 2025
S3 Second Term Uniform Test 2

MATHEMATICS

28th May, 2025
Time Allowed: 30 minutes
Total Marks: 20

INSTRUCTIONS

1. Read carefully the instructions on the Answer Sheet. After the announcement of the start of the examination, you should insert the information required in the spaces provided.

2. When told to open this book, you should check that all the questions are there. Look for the words '**END OF PAPER**' after the last question.

3. All questions carry equal marks.

4. **ANSWER ALL QUESTIONS**. You should use an HB pencil to mark all your answers on the Answer Sheet, so that wrong marks can be completely erased with a clean rubber. You must mark the answers clearly; otherwise you will lose marks if the answers cannot be captured.

5. You should mark only **ONE** answer for each question. If you mark more than one answer, you will receive **NO MARKS** for that question.

6. No marks will be deducted for wrong answers.

7. The diagrams in this paper are not necessarily drawn to scale.

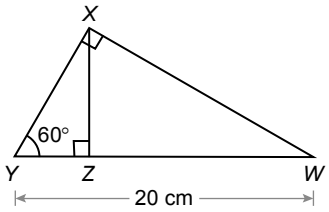
8. Calculators with 'H.K.E.A.A. Approved' can be used.

Choose the best answer for each question.

1. If $\begin{cases} 3x+5y=1 \\ x+4y=5 \end{cases}$, then $x=$

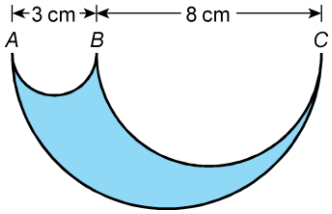
   A. -3.
   B. -2.
   C. 2.
   D. 3.

2. In the figure, WZY is a straight line. Find the length of XZ.



   A. $5\sqrt{3}$ cm
   B. $10\sqrt{3}$ cm
   C. $\frac{10\sqrt{3}}{3}$ cm
   D. 5 cm

3. The following figure is formed by semi-circles. Find its perimeter.



   A. 5π cm^2
   B. 11π cm^2
   C. 22π cm^2
   D. 44π cm^2

4. Given that the mean of a set of data 3, 6, 7, 13, 14, a, b is 11, find the mean of another set of data 0.3, 0.6, 0.7, 1.3, 1.4, 0.1a, 0.1b.

   A. 0.1
   B. 1
   C. 1.1
   D. 11

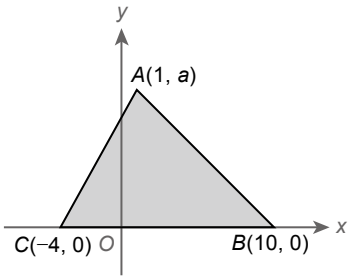
5. A letter is randomly selected from the word 'AUTOMOBILE'. Find the probability of getting a vowel.

   A. $\frac{7}{10}$
   B. $\frac{3}{5}$
   C. $\frac{1}{2}$
   D. $\frac{2}{5}$

6. $\frac{\cos\theta(1+\tan\theta)}{\sin\theta}-\frac{\cos\theta-\sin\theta}{\cos\theta}=$

   A. 0.
   B. $\sin\theta+\cos\theta$.
   C. $\sin\theta\cos\theta$.
   D. $\frac{1}{\sin\theta\cos\theta}$.

7. In the figure, the area of ΔABC is 63 sq. units. Find the length of AC correct to 3 significant figures.



   A. 6.73 units
   B. 10.3 units
   C. 12.7 units
   D. 21.6 units

8. Straight line L passes through points $A(5,\ 7)$ and $B(-3,\ 3)$. Which of the following points lie on L?

I. $X(9,\ 9)$

II. $Y(-13, -2)$

III. $Z(-4, -11)$

A. I and II only

B. I and III only

C. II and III only

D. I, II and III

9. If $\tan\left(\frac{\theta}{2} - 35°\right) = \frac{1}{\tan 2\theta}$, then $\theta =$

A. 14°.

B. 25°.

C. 50°.

D. 70°.

10. Danny walks up a slope with the inclination of 15° and the horizontal distance moved is 3 m. Find his actual distance moved correct to 3 significant figures.

A. 0.776 m

B. 2.90 m

C. 3.11 m

D. 11.6 m

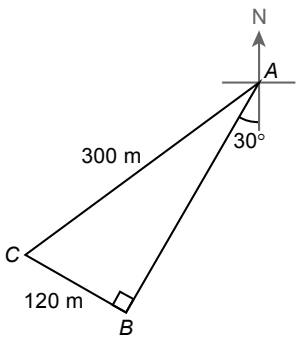
11. In the figure, find the compass bearing of point C from point A correct to 3 significant figures.

A. N51.8°E

B. N53.6°E

C. S51.8°W

D. S53.6°W



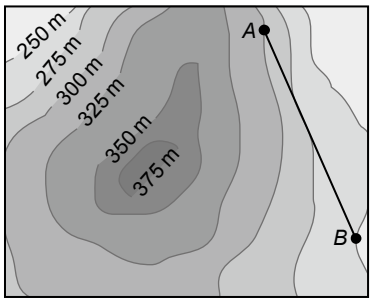
12. The figure shows a map with the scale of $1:10\,000$. From the map, we have $AB = 3$ cm. Find the gradient of AB.

A. 6

B. $\frac{6}{5}$

C. $\frac{5}{6}$

D. $\frac{1}{6}$



Scale 1 : 10 000

13. A set of data 4, 4, 5, 8, 9 is given. The mean of the set of data will increase and the mode will remain unchanged after

A. removing a datum '5'.

B. inserting a datum '5'.

C. removing a datum '4'.

D. inserting a datum '4'.

14. A fair coin is tossed and a fair dice is rolled. Find the probability of obtaining a 'head' and a multiple of 3.

A. $\frac{1}{3}$

B. $\frac{1}{4}$

C. $\frac{1}{6}$

D. $\frac{1}{12}$

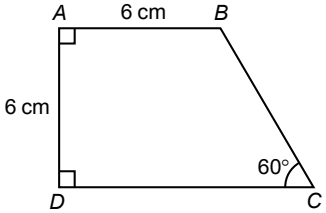
15. Find the perimeter of trapezium $ABCD$ in the figure.

A. 33 cm

B. $(30 + 2\sqrt{3})$ cm

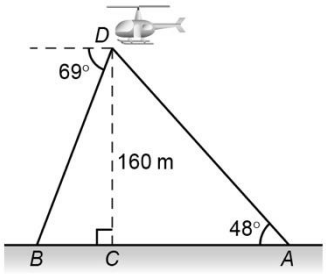
C. $(21 + 4\sqrt{3})$ cm

D. $(18 + 6\sqrt{3})$ cm



16. In the figure, BCA is a horizontal line. A helicopter D is 160 m above point C. The angle of elevation of the helicopter from point A is 48° and the angle of depression of point B from the helicopter is 69°. Find the distance between A and B correct to 3 significant figures.

A. 205 m
B. 387 m
C. 595 m
D. 686 m

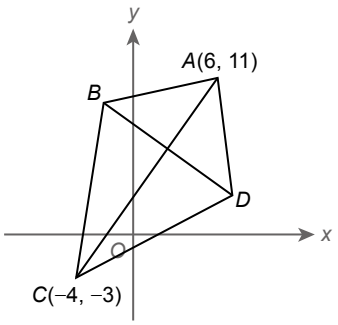


17. Which of the following roads is the steepest?

A. A road with the inclination of 13°.
B. A road with the gradient of $1:5$.
C. A road with the gradient of $\frac{1}{4}$.
D. A road with the gradient of 0.27.

18. In the figure, $ABCD$ is a kite. Find the slope of BD.

A. $-\frac{1}{4}$
B. $-\frac{5}{7}$
C. $-\frac{7}{5}$
D. -4



19. Joey often goes to restaurant A, B, C or D for lunch. The following table shows the lunch expenses of Joey in these restaurants and the corresponding probabilities for Joey to go to the restaurants for lunch.

Restaurant	A	B	C	D
Expense ($)	36	40	45	52
Probability	0.5	0.28	0.12	0.1

Find the expected value of the lunch expense of Joey.

A. $38
B. $39.8
C. $42.5
D. $43.25

20. The table shows the scores of team A and team B in three rounds of a competition, where the score of team B in the 3rd round is accidentally covered in ink.

	1st Round	2nd round	3rd round
Team A	300	100	200
Team B	400	200	[redacted]
Weight	1	2	3

Given that the weighted mean score of team A is less than that of team B, which of the following may be the score of team B in the 3rd round?

I. 100
II. 200
III. 300

A. II only
B. I and II only
C. II and III only
D. I, II and III

END OF PAPER