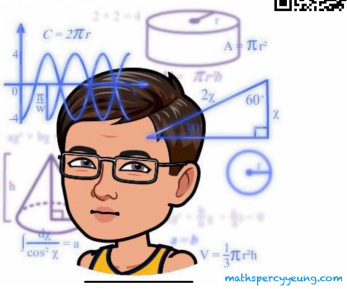


Question-Answer Sheet

Time Allowed : 1 hour 45 minutes **Full Marks : 100**

Name : _____ ( ) S1 _____ Parent's signature: _____

Part I	Part II	Mark Deduction	
		–	100

****

READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE YOU START!

1. **DO NOT** turn over this cover page until you are told to do so.

2. This paper consists of **TWO** parts.
   Part I consists of **THREE** sections, A(1), A(2) and B, including 13 short and long questions. This part carries 70 **marks**.
   Part II consists of 15 multiple-choice questions, which carries 30 **marks**.

3. Answer **ALL** questions.

4. All steps must be clearly shown with **good handwriting.**

5. **Unless otherwise specified**, numerical answers should either be exact or correct to 3 significant figures.

6. The diagrams in this paper are **NOT** necessarily drawn to scale.

7. **DO NOT** do any rough work on the question-answer sheet.
   Do your rough work on the separate rough work sheet provided.

PART I (Short and Long Questions): (70 marks)

Answer ALL questions and write your answers in the spaces provided. Give reasons if necessary.

SECTION A(1) (30 marks)

1. **(a)** Round **up** 6.771 92 to 3 significant figures. (1 mark)

(b) Round **down** 5.851 94 to 2 decimal places. (1 mark)

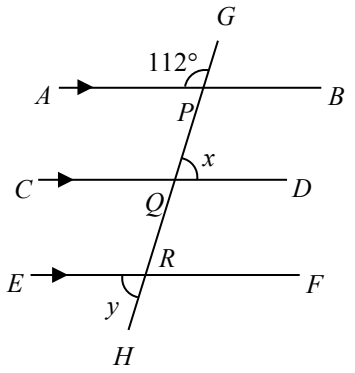
(c) Round **off** 3.906 to the nearest integer. (1 mark)

2. Simplify $\frac{(3c^3d^2)^2}{cd^3}$. (3 marks)

3. (a) Expand $(2x - 1)(x + 3)$ (2 marks)

(b) Use the result of (a), expand $(5x + 7)(4x) - (2x - 1)(x + 3)$ (3 marks)

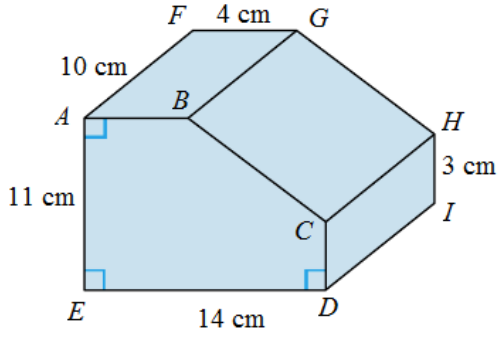
4. In the figure, GH cuts AB, CD and EF at points P, Q and R respectively.
It is given that AB // CD // EF. Find x and y. (3 marks)



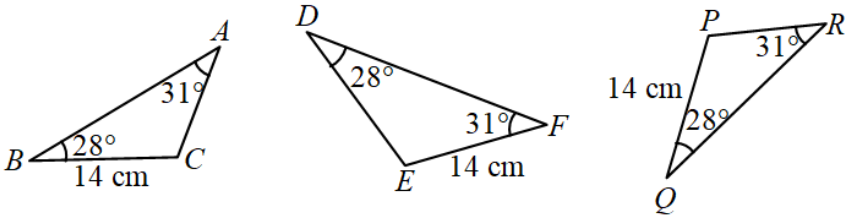
5. In the figure, the object is a right prism.

(a) Find the area of polygon *ABCDE*. (4 marks)

(b) Find the volume of the prism. (2 marks)

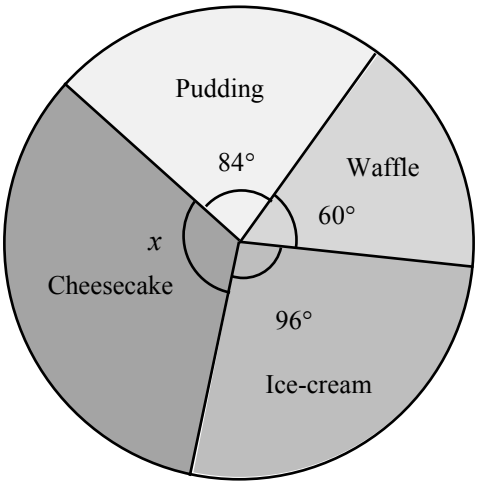


6. Determine which two triangles are congruent and give the reason. (5 marks)



7. The following pie chart shows the sales of different kind of desserts in a kiosk in a day.
It is known that the sale of ice-cream is $3600.

Sales of different kinds of desserts in a day



(a) Find x. (1 mark)

(b) Find the total sales of desserts of the kiosk on that day. (2 marks)

(c) Find the sale of Cheesecake on that day. (2 marks)

SECTION A(2) (20 marks)

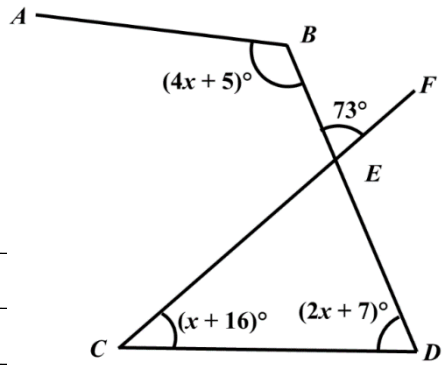
8. Shop *A* and Shop *B* sell the same model of a coffee machine. The marked prices of the coffee machine in Shop *A* and Shop *B* are \$8500 and \$8000 respectively. It is given that Shop *A* offers a discount of 30% on the coffee machine while Shop *B* offers a price deduction of \$2000 on the coffee machine.

(6 marks)

(a) Find the selling price of the coffee machine in Shop A.

(b) Which shop sells the coffee machine at a lower price? Explain your answer.

9. In the figure, *BD* and *CF* intersect at point *E*. (7 marks)



(a) Find the value of *x*.

(b) Prove that *AB* // *CD*.

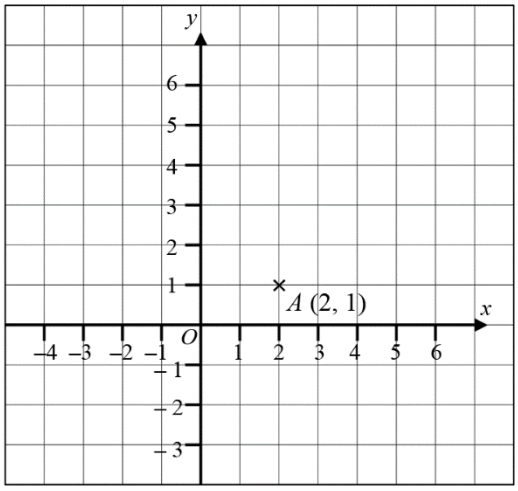
10. The coordinates of point A are (2, 1).

(a) Point A is rotated about the origin through 180º to point B. Find the coordinates of B. (1 mark)

(b) Point B is translated upwards by 4 units to point C. Find the coordinates of C. (1 mark)

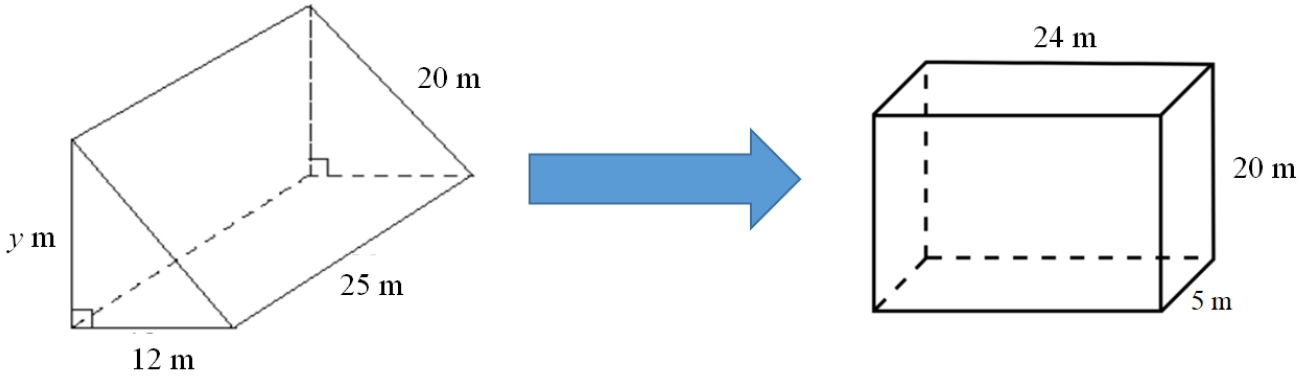
(c) Point C is reflected with respected to the y-axis to point D. Find the coordinates of D. (1 mark)

(d) Find the area of the quadrilateral $ABCD$. (4 marks)



SECTION B (20 marks)

11. In the figure, a solid right prism with triangular base is melted and recast into a solid cuboid.



(a) Find y. (2 marks)

(b) Find the total surface area of right prism with triangular base. (2 marks)

(c) What is the percentage change of total surface area after recasting. (2 marks)

12. The following back-to-back stem-and-leaf diagram shows the distribution of the scores of 20 students in classes 1A and 1B in a Mathematics quiz.

Scores of 20 students in classes 1A and 1B in a Mathematics quiz

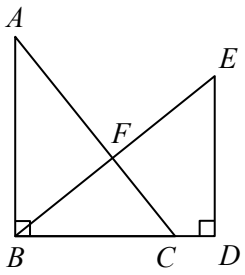
Class 1A						Class 1B					
Leaf (1 mark)						Stem (10 marks)	Leaf (1 mark)				
				6	x	3	8	9	9	9	9
				5	1	4	0	2	7	8	9
			8	1	1	5	1	1	2	y	4
		9	8	7	7	0	6	4	8		
9	9	8	8	7	3	7	1	4	x		
				y	3	8					

(a) Write down all possible values of x and y. (2 marks)

(b) Find the greatest possible difference between the highest and lowest scores in class 1B. (2 marks)

(c) Which class do you think had a better overall performance? Explain your answer. (3 marks)

13. In the figure, C is a point lying on BD such that $BC = DE$. AC and EB intersect at point F. It is given that $\angle DEB = 48°$ and $\angle BAC = 42°$.



(a) (i) Find $\angle DBE$. (1 mark)

(ii) Prove that $\triangle ABC \cong \triangle BDE$. (2 marks)

(b) Prove that $AC \perp BE$. (2 marks)

(c) If $AB = 41$ cm and $DE = 35$ cm, find CD. (2 marks)

End of Part I

Time Allowed: 1 hour 45 minutes

Name _____ ( ) Class S1 ____

Part II Multiple-Choice Questions (30 marks)

Mark all the answers on MC Answer sheet with a HB pencil.

The answers should be filled as ■ in the answer sheet.

1. "The sum of 5.2 and 3.6 is divided by 3" means

A. $5.2 + 3.6 \div 3$.

B. $(5.2 + 3.6) \div 3$.

C. $(3 \div 3.6) + 5.2$.

D. $3 \div (5.2 + 3.6)$.

2. Consider a 12-storey building with G/F and 1/F to 11/F. If Ann is 3 levels above Bess while Christine is 6 levels below Ann, then Bess is

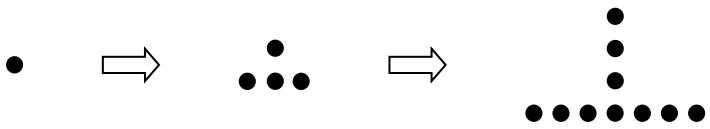
A. 3 levels above Christine.

B. 3 levels below Christine.

C. 9 levels above Christine.

D. 9 levels below Christine.

3. In the figure, the 1st pattern consists of 1 dot. For any positive integer n, the $(n + 1)$th pattern is formed by adding $3n$ dots to the nth pattern. Find the number of dots in the 7th pattern.



A. 21

B. 31

C. 64

D. 76

4. The solution of $\frac{1}{2}+\frac{r}{16}=-\frac{3}{4}$ is

A. $r = -4$.

B. $r = -20$.

C. $r = 4$.

D. $r = 20$.

5. Estimate the value of 536 + 233 + 357 + 1036 + 967 by rounding up each number to the nearest hundred.

A. 2900

B. 3100

C. 3300

D. 3400

6. The solution of $7b - 9 = -2(3 - 2b)$ is

A. $b = -3$.

B. $b = -1$.

C. $b = 1$.

D. $b = 3$.

7. If X is 20% smaller than Y and Y is 20% smaller than Z, then

A. X is 36% smaller than Z.

B. X is 40% smaller than Z.

C. Z is 36% greater than X.

D. X is equal to Z.

8. In a test, Teresa scores 92 marks. It is given that Teresa scores 12 more marks than four times Jim's score. What is Jim's score?

A. 80 marks

B. 26 marks

C. 23 marks

D. 20 marks

9. The length and the width of a rectangle are 20 cm and 15 cm respectively. If the length of the rectangle is decreased by 5% and the width of the rectangle is increased by 30%, find the percentage change in its perimeter.

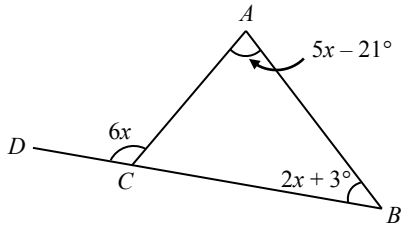
A. −10%

B. −110%

C. +10%

D. +110%

10. In the figure, if *BCD* is a straight line, then x =



A. 18°.

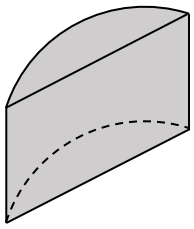
B. 20°.

C. 22°.

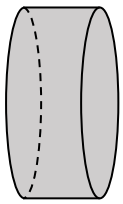
D. 24°.

11. Which of the following solids is a polyhedron?

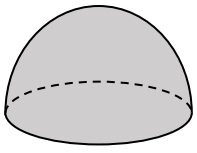
A.



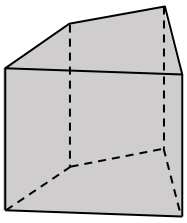
B.



C.



D.



12. Which of the following is/are true?

I. If P is a point that lies in quadrant IV, then its y-coordinate must be positive.

II. The origin lies in quadrant I.

III. If Q is a point that lies on the y-axis, then its x-coordinate must be zero.

A. I only

B. III only

C. I and III only

D. II and III only

13. The coordinates of two points P and Q are $(-7, p)$ and $(-7, -4)$ respectively. It is given that $PQ = 20$ units and P lies above Q. Find p.

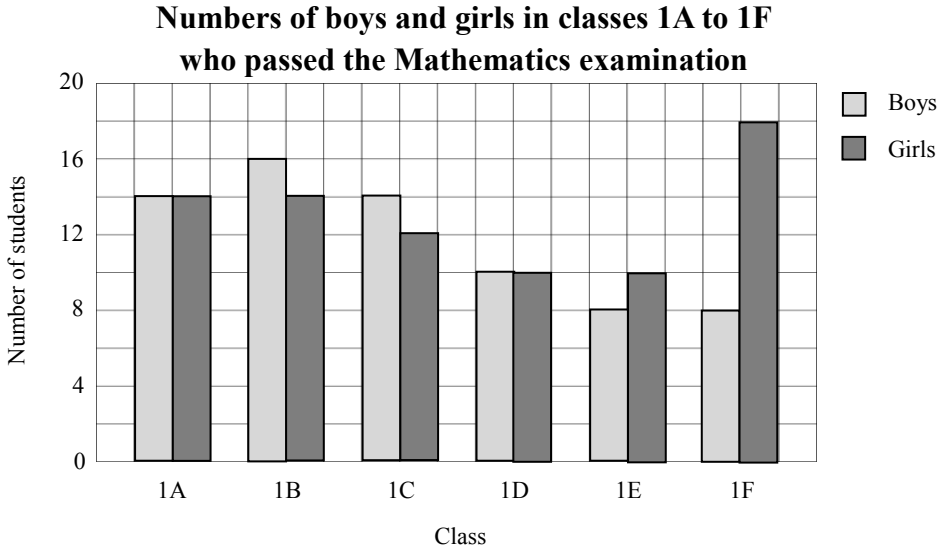
A. -24

B. -16

C. 16

D. 24

14. The following statistical chart shows the numbers of boys and girls in classes 1A to 1F who passed the Mathematics examination.



According to the above chart, which of the following are true?

I. Class 1B had the greatest number of students who passed the examination.

II. In Class 1F, boys perform better than girls in the examination.

III. The number of girls who passed the examination is greater than that of boys.

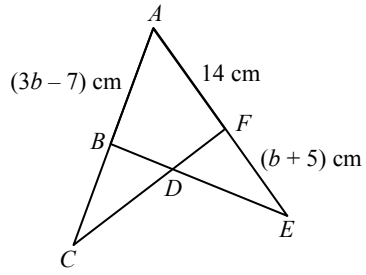
A. I and II only

B. I and III only

C. II and III only

D. I, II and III

15. In the figure, B and F are points lying on AC and AE respectively. BE and CF intersect at point D. It is given that $\triangle ACF \cong \triangle AEB$. Find AC.



A. 26 cm
B. 14 cm
C. 12 cm
D. 7 cm

End of Part II

~End of Paper~