NAN HUA PRIMARY SCHOOL
PRELIMINARY EXAMINATION 2023
PRIMARY 6

MATHEMATICS
PAPER 1
(BOOKLET A)

Total Time for Booklets A and B: 1 hour

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.
6. The use of calculators is **NOT** allowed.

Name : _____ ( )

Class : 6_____ **6M**_____

Date : 23 August 2023 **Parent's Signature :**_____

This booklet consists of 7 printed pages and 1 blank page.

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each. For each question, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.

(20 marks)

---

1 How many hundredths are there in 0.8?

(1) 0.08

(2) 0.8

(3) 8

(4) 80

2 What is the sum of all the factors of 9?

(1) 12

(2) 13

(3) 15

(4) 16

3 Express 8 km 20 m in km.

(1) 8020 m

(2) 8.002 km

(3) 8.02 km

(4) 8.2 km

4 Express $\frac{3}{8}$ as a decimal correct to 2 decimal places.

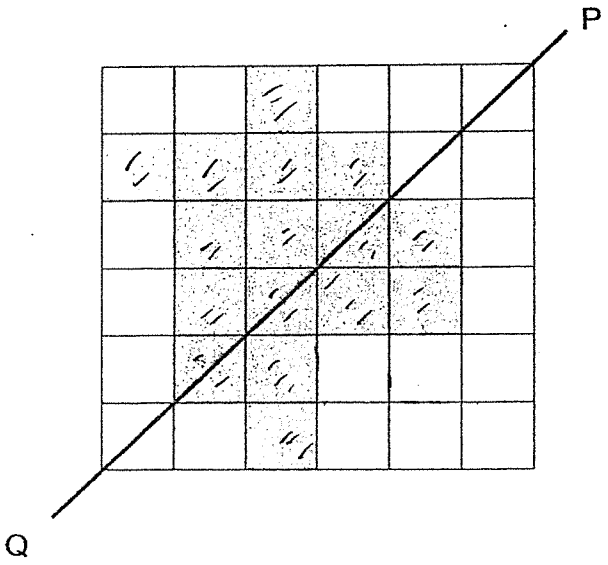
(1) 0.308

(2) 0.38

(3) 3.08

(4) 3.8

5 What is the smallest number of squares that must be shaded so that the line PQ becomes a line of symmetry?



(1) 5

(2) 2

(3) 3

(4) 4

6 A movie started at 10.35 p.m. and ended at 1.15 a.m. How long did the movie last?

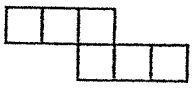
(1) 2 h 10 min

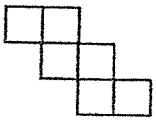
(2) 2 h 20 min

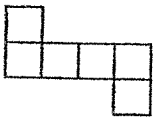
(3) 2 h 40 min

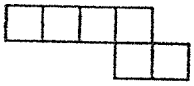
(4) 2 h 50 min

7 Which one of the following is not a net of the cube?

(1) 

(2) 

(3) 

(4) 

8 Which of the following is the most likely mass of an apple?

(1) 20 kg

(2) 2 kg

(3) 200 g

(4) 20 g

9 James paid $20 for 40 rulers. How much did each ruler cost?

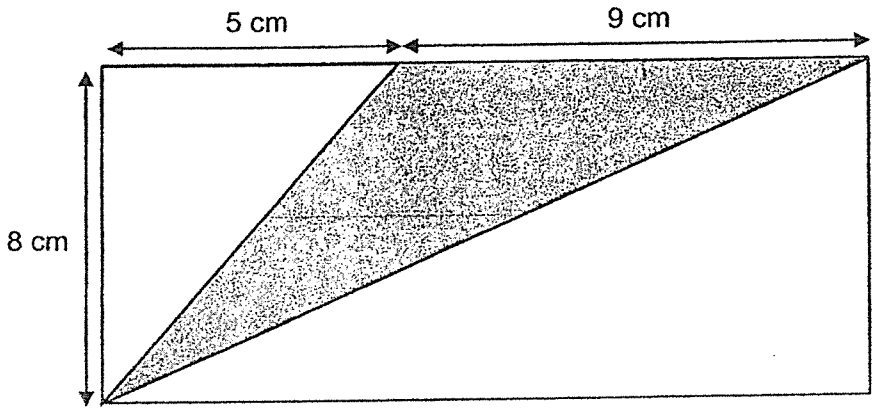
(1) 5 cents

(2) 2 cents

(3) 50 cents

(4) 20 cents

10 In the rectangle below, find the area of the shaded triangle.



(1) 20 cm²

(2) 36 cm²

(3) 56 cm²

(4) 72 cm²

11 Two years ago, Andy was n years older than Belle.

Andy is twice her age now, how old was Belle 2 years ago?

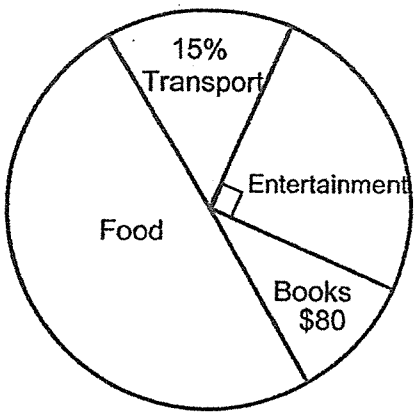
(1) n

(2) 2n

(3) n – 2

(4) 2n – 2

12 The pie chart shows Lilian's expenditure last month. She spent half of what she had on food. How much did she spend on transport?



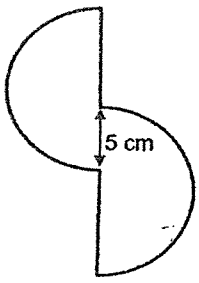
(1) $120

(2) $200

(3) $400

(4) $800

13 The figure is made up of 2 identical semicircles of diameter 14 cm. Find the perimeter of the figure. Take $\pi = \frac{22}{7}$



(1) 44 cm

(2) 62 cm

(3) 67 cm

(4) 72 cm

14 There were a total of 50 blue, red and white marbles in a box. The number of blue and red marbles was $\frac{2}{5}$ of the total number of marbles. The number of red and white marbles was $\frac{9}{10}$ of the total number of marbles. Find the number of red marbles.

(1) 15

(2) 20

(3) 25

(4) 45

15 In a school, 40% of the pupils are boys. 7
5% of the boys and 20% of the girls walk to school.
What percentage of the pupils in the school walk to school?

(1) 14%

(2) 15%

(3) 25%

(4) 65%

NAN HUA PRIMARY SCHOOL
PRELIMINARY EXAMINATION 2023
PRIMARY 6

MATHEMATICS
PAPER 1
(BOOKLET B)

Total Time for Booklets A and B: 1 hour

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.
6. The use of calculators is **NOT** allowed.

Marks Obtained

Paper 1	**Booklet A**		/ 45
	Booklet B		
Paper 2			/ 55
Total			/ 100

Name : _____ ( )

Class : 6_____ **6M**_____

Date : 23 August 2023 **Parent's Signature:**_____

This booklet consists of 10 printed pages

Questions **16** to **20** carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (5 marks)

Do not write in this space

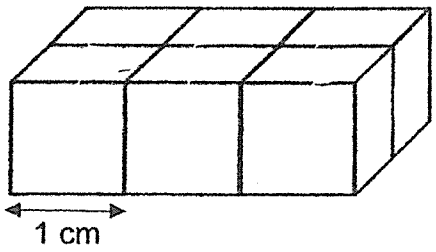
16 Express 8% as a fraction. Give your answer in its simplest form.

Ans : _____

17 Round 589.02 to the nearest tenth.

Ans: _____

18 Six identical cubes are glued together to form a cuboid as shown below. Each cube has the length of 1 cm. The cuboid is then submerged fully into a pail of red paint. Find the total area of the cuboid that is painted red.



Ans: _____ cm^2

19 What is the greatest possible whole number that gives 9300 when rounded to the nearest ten?

Do not write in this space

Ans: _____

20 Give a fraction that is halfway between $\frac{1}{5}$ and $\frac{1}{3}$.

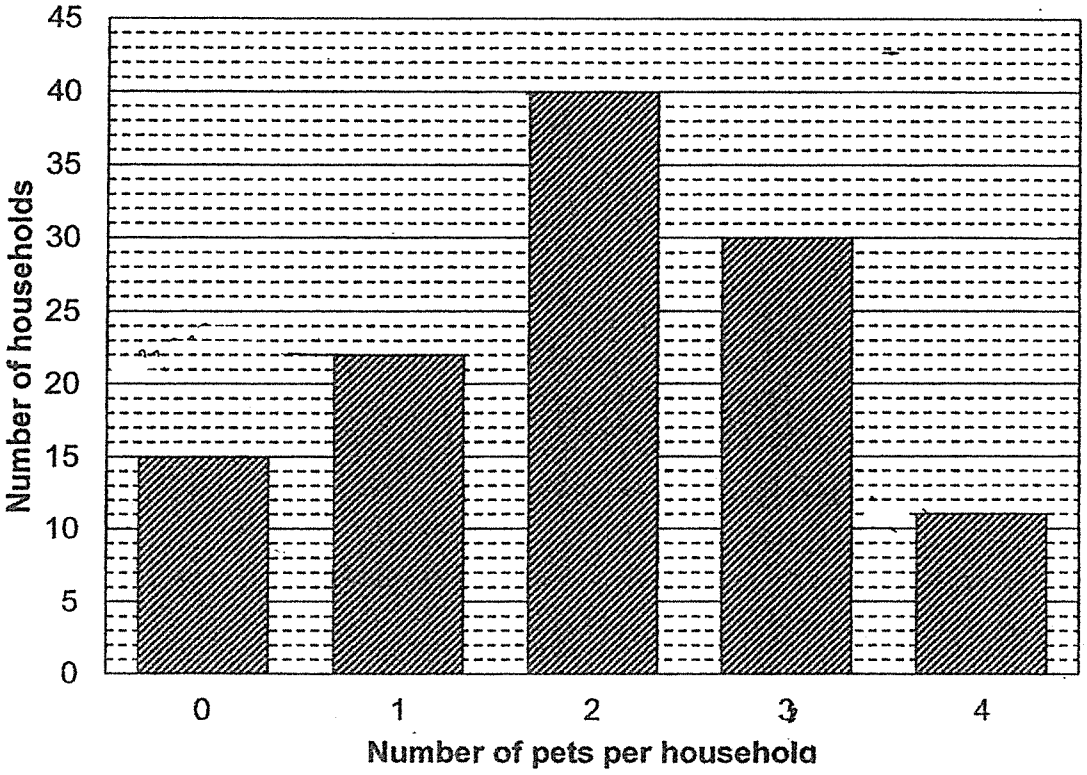
Ans : _____

(Go on to the next page)

Questions **21** to **30** carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For question which require units, give your answers in the units stated. (20 marks)

Do not write in this space

21 The graph below shows the number of pets per household in a block of flats.



How many pets are there in this block of flats?

Ans : _____

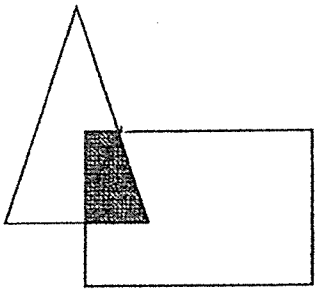
Do not write in this space

22 Study the pattern below carefully. If the pattern continues, what is the 99th letter?

S Q U A R E S Q U A R E S Q U A R E .....
1st 18th

Ans : _____

23 The figure below is made up of triangle and a rectangle. The area of the rectangle is twice the area of the triangle. $\frac{1}{8}$ of the rectangle is shaded. What is the ratio of the shaded area to the total area of the figure?

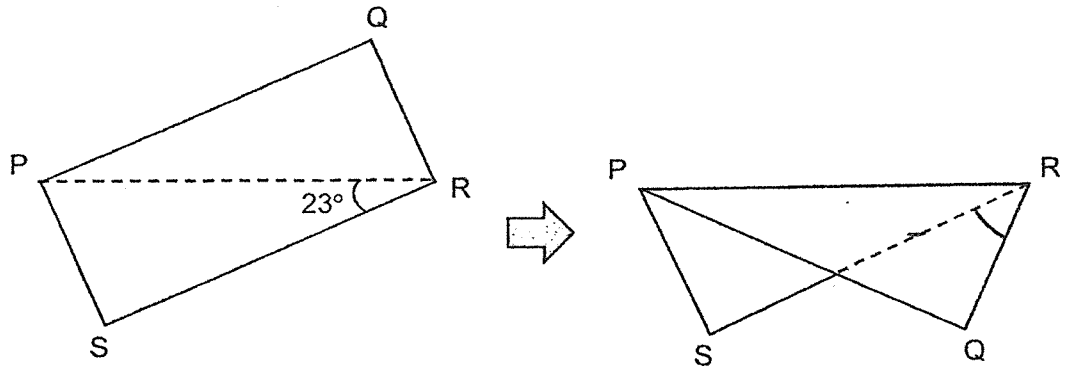


Ans: _____

(Go on to the next page)

24 A rectangle PQRS is folded along its diagonal PR as shown below. Given that ∠PRS = 23°, find ∠QRS after the fold.

Do not write in this space



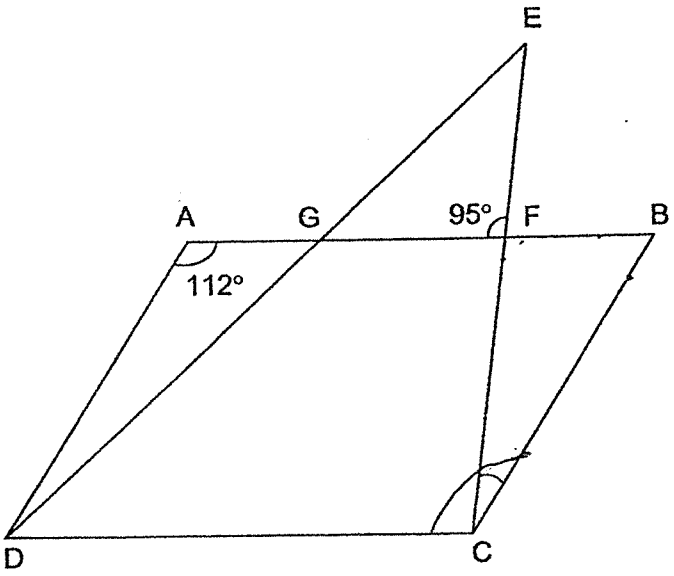
Ans : _____ °

Do not write in this space

25 In the diagram below, ABCD is a parallelogram.

CFE and DGE are straight lines.

Find ∠BCF.



Ans : _____ °

26 Jack and Keith left Town X at the same time and travelled in opposite directions along a straight road. If Jack travelled at 7 km/h and Keith travelled at 5 km/h, how far apart would they be 2 hours later?

Do not write in this space

Ans : _____ km

27 A group of 5 boys rented a paddle boat for 2 hours and took turns to play. At any one time, there were 3 boys paddling the boat. On average, how long did each boy play on the paddle boat?

Ans: _____ min

28 Two numbers X and Y are in the ratio of 3 : 7. After Y is halved and X is increased by 4, the ratio became 1 : 1. What is the original value of X?

Do not write in this space

Ans: _____

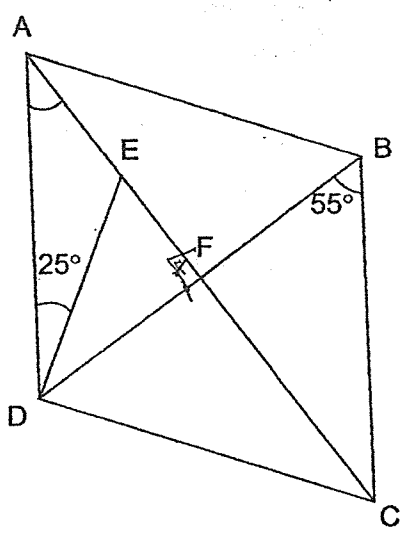
29 John has just enough money to buy either 6 rulers and 3 erasers or 4 rulers and 8 erasers. He spends all the money on erasers, how many erasers can he buy?

Ans : _____

(Go on to the next page)

30 In the figure below, ABCD is a rhombus. ~~AEFG~~ AE FC and BFD are straight lines.

Find ∠DAE.



Do not write in this space

Ans : _____ °

End of Paper

NAN HUA PRIMARY SCHOOL
PRELIMINARY EXAMINATION 2023
PRIMARY 6

MATHEMATICS
Paper 2

Time : 1 hour 30 minutes

INSTRUCTION TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Use a dark blue or black ballpoint pen to write your answers in the space provided for each question.
6. Do not use correction fluid/tape or highlighters.
7. The use of an approved calculator is allowed.

Marks Obtained

Total	Max Mark
	55

Name : _____( )

Class : 6_____ / 6M_____

Date : 23 August 2023 **Parent's Signature :**_____

This booklet consists of 15 printed pages and 1 blank page.

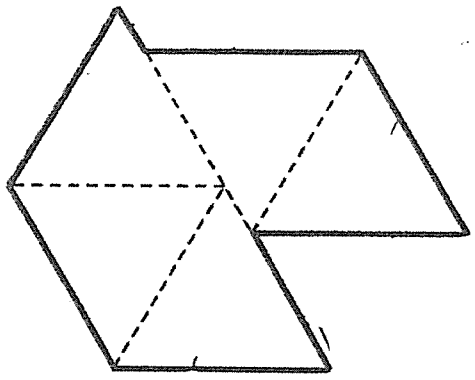
Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the space provided. For questions which require units, give your answers in the units stated. (10 marks)

Do not write in this space

1 The total mass of two boys was 72.9 kg. The difference between their mass was 9.3 kg. What was the mass of the lighter boy?

Ans: _____ kg

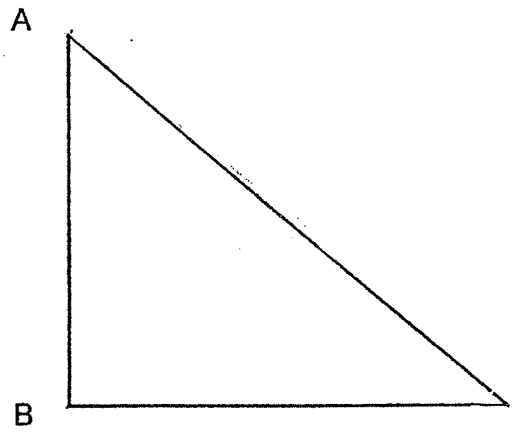
2 The figure below is formed by five identical equilateral triangles. The total perimeter of the five triangles is 135 cm. What is the perimeter of the figure?



Ans: _____ cm

3 In the figure below, A and B are two points on a map. Point A is north of B. Point C is east of B and $\angle BAC = 50°$. Draw triangle ACB by completing the figure.

Do not write in this space



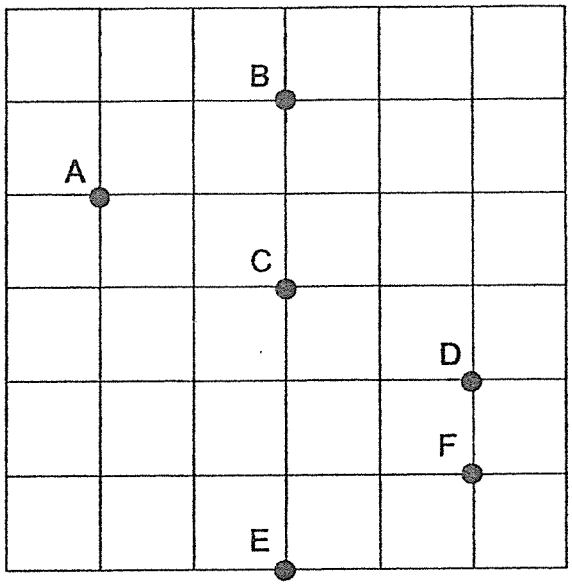
4 A printing machine prints 8 pages every 5 seconds. How many pages can it print in 10 minutes?

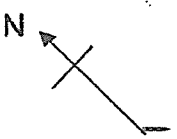
Ans: _____

(Go on to the next page)

5 The square grid shows the position of points A, B, C, D, E and F.

Do not write in this space





(a) Which one of the points shown on the square grid is south of point C?

Ans: (a) Point _____

(b) Jason stood at one of the points facing point B. After he turned 45° clockwise, he faced point D. Which point was Jason at?

Ans: (b) Point _____

For questions **6** to **17**, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part-question. (45 marks)

Do not write in this space

6 3 m of fabric was cut into shorter pieces. Each piece was $\frac{2}{5}$ m, except for the last piece which was shorter.

(a) How many $\frac{2}{5}$ m pieces were there?

Ans: (a) _____ [2]

(b) What was the length of the last piece?

Ans: (b) _____ [1]

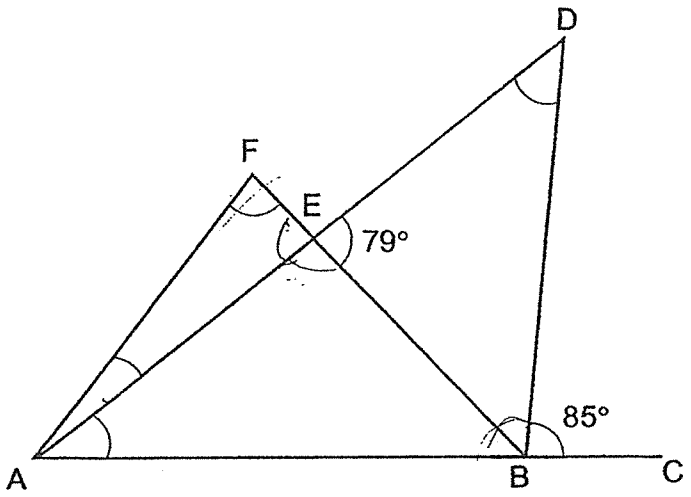
7 In a hall, 70% of the children were boys. After 87 more children entered the hall, the number of boys increased by 20% and the number of girls increased by 50%. How many children were there in the hall in the end?

Ans: _____ [3]

(Go on to the next page)

8 In the figure, AFB and ADB are triangles. ABC, FEB and AED are straight lines. Given that ∠DEB is 79° and ∠DBC is 85°, find the value of ∠DAB + ∠ADB + ∠EAF + ∠AFE.

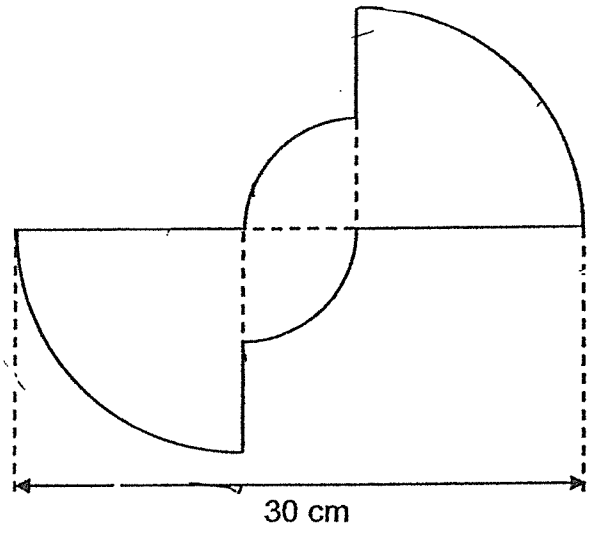
Do not write in this space



Ans: _____ [3]

9 The figure below is made up of 2 identical big quarter circles and 2 identical small quarter circles. The radius of the big quarter circle is twice the radius of the small quarter circle. Find the perimeter of the figure in terms of π.

Do not write in this space



Ans: _____ [4]

10 The average score for a Mathematics test in a class of students was 80. Later, it was discovered that the score of one student was wrongly recorded as 48 when it should be 98 marks. After correcting this score, the average score of the class increased to 82. How many students were there in the class?

Do not write in this space

Ans: _____ [3]

Do not write in this space

11 Every week, Ailing saves \$2m, Bala saves \$(m + 5) and Carrie saves \$(3m – 2).

(a) Find the average weekly savings of the three children in terms of m.

(a) _____ [1]

(b) Find the average savings of the 3 children when m = 4.

Ans: (b) _____ [1]

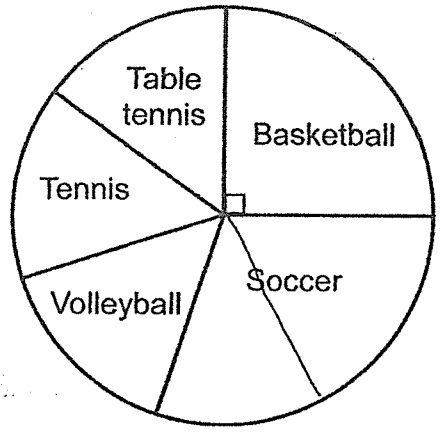
(c) Each statement is either true, false or impossible to tell from the information given. Put a tick (√) to indicate your answer.

Statement	True	False	Not possible to tell
Ailing's savings is less than the average savings.			
Carrie saves the most money.			

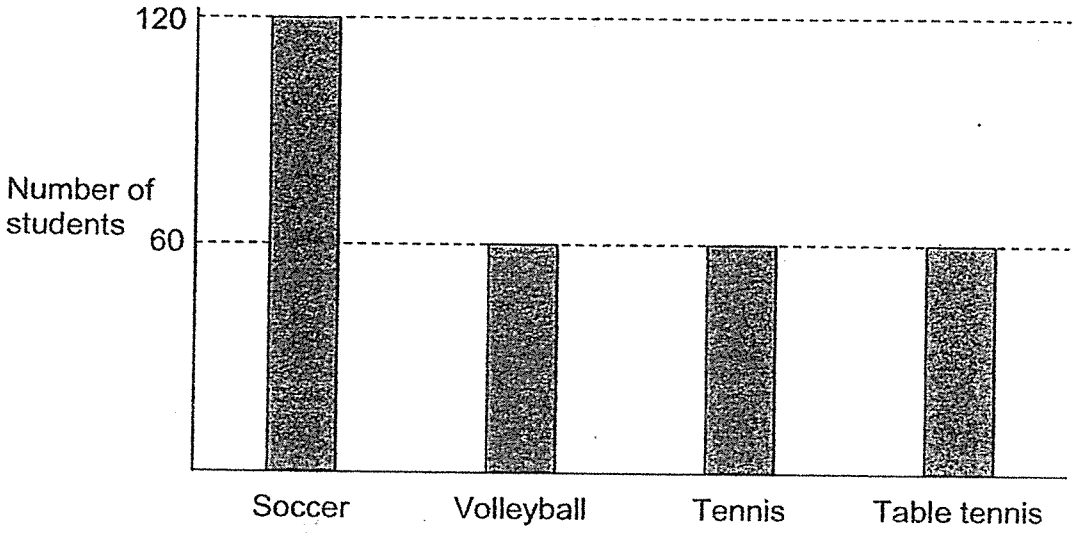
[2]

12 The pie chart below shows the favourite ball games of a group of students.

Do not write in this space



Part of the data is also represented in the bar graph below.



(a) What percentage of the students chose soccer as their favourite ball game?

Ans: (a) _____ [1]

(b) How many students were there in the group?

Ans: (b) _____ [2]

Do not write in this space

13 Tim had $\frac{2}{3}$ as much money as Peter. After Tim received \$120 from his mother and Peter used \$120, Tim had twice as much money as Peter. How much money did Tim have at first?

Ans: _____ [3]

14 Look at the figures below. They are made up of shaded tiles and plain tiles.

Do not write in this space

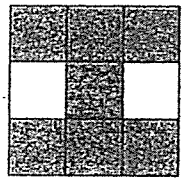


Figure 1

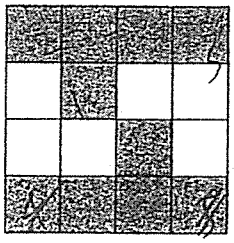


Figure 2

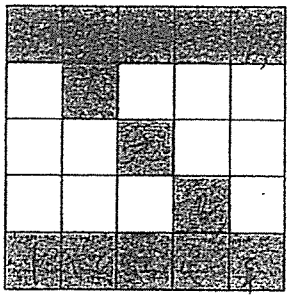


Figure 3

(a) There are 19 shaded tiles in a figure. What is the figure number?

Ans: (a) _____ [1]

(b) What is the total number of shaded and plain tiles in Figure 18?

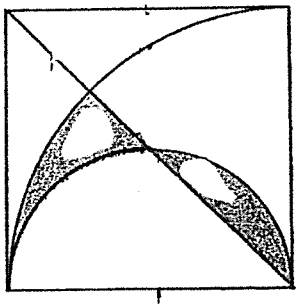
Ans: (b) _____ [1]

(c) What percentage of the total number of tiles in Figure 18 are shaded tiles?

Ans: (c) _____ [3]

15 The figure below is made up of a square, a quarter circle and a semicircle. The area of the square is 196 cm^2. Find the area of the shaded parts. (Take $\pi = 3.14$)

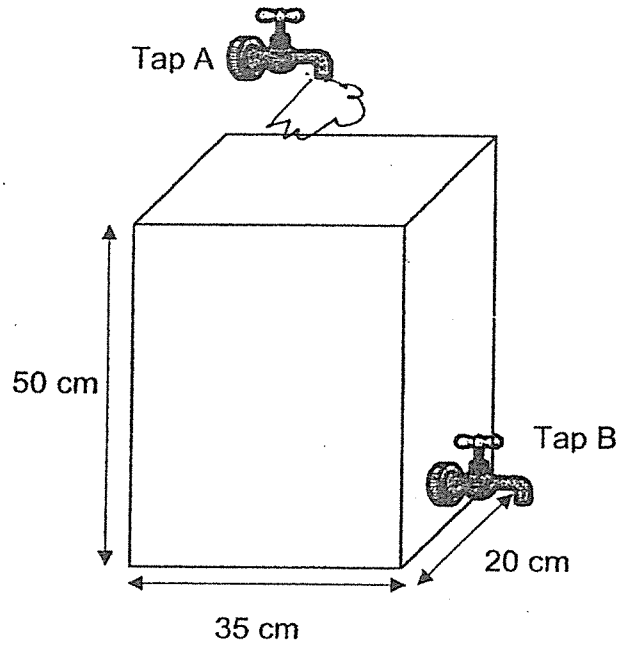
Do not write in this space



Ans: _____ [4]

16 An empty rectangular tank measuring 35 cm by 20 cm by 50 cm is being filled with water from Tap A at a rate of 700 m ℓ per minute. Tap B drains out water from the tank at 0.5 ℓ per minute. Tap A is turned on 6 minutes before tap B.

Do not write in this space



(a) How much water was there in the tank after 6 minutes?

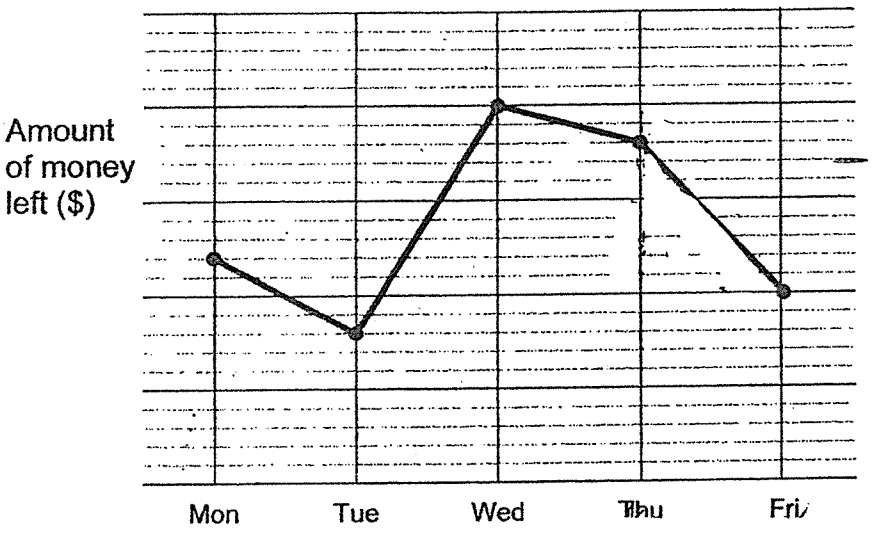
Ans: (a) _____ [1]

(b) How ~~long will~~ it take for 60% of the tank to be filled?

Ans: (b) _____ [4]

17 Alice was given the same amount of pocket money every day. The line graph shows the amount of money she had left at the end of the day for a particular week.

Do not write in this space



(a) On which day did Alice spend the most money?

Ans: (a) _____ [1]

(b) What is the percentage decrease in the amount of money left on Thursday from Wednesday?

Ans: (b) _____ [2]

(c) Alice had $1.60 less of the pocket money left on Friday compared to Thursday. What is the total amount of money left for the 5 days?

Ans: (c) _____ [2]

End of Paper

EXAM PAPER 2023

LEVEL : PRIMARY 6

SCHOOL : NAN HUA PRIMARY SCHOOL

SUBJECT : MATHEMATICS

TERM : PRELIMINARY EXAMINATIONS

PAPER 1

BOOKLET A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	2	3	2	1	3	4	3	3	2
Q11	Q12	Q13	Q14	Q15					
3	1	2	1	1					

Delivery: 98578229, 98518226, 81612644, 93858789

BOOKLET B

Q16. $\frac{2}{25}$

Q17. 589.0

Q18. 22 cm^2

Q19. 9304

Q20. $\frac{4}{15}$

Q21. 236

Q22. U

Q23. 1 : 11

Q24. 44°

Q25. 17°

Q26. 24 km

Q27. 72

Q28. 24

Q29. 18

Q30. 35°

PAPER 2

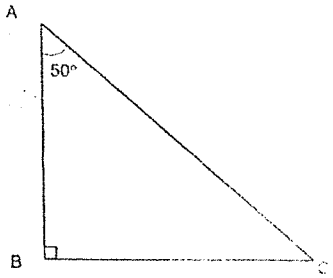
Q1. $72.9 - 9.3 = 63.6$

$63.6 \div 2 = 31.8$

Q2. $135 \div 15 = 9$

$9 \times 7 = 63$

Q3.



Q4. $60 \div 5 = 12$

$12 \times 8 = 96$

$96 \times 10 = 960$

Q5. a) F

b) E

Q6. a) $3 \div \frac{2}{5} = 3 \times \frac{5}{2} = 7\frac{1}{2}$

Ans: 7

b) $\frac{1}{2} \times \frac{2}{5} = \frac{1}{5}$ m

Q7. B : G

7 : 3

$\frac{1}{5} \times 7 = 1.4$

$\frac{1}{2} \times 3 = 1.5$

$1.4 + 1.5 = 2.9$

$87 \div 2.9 = 30$

$30 \times 12.9 = 387$

Q8. $180° - 85° = 95°$

$180° - 95° = 85°$

$180° - 79° = 101°$

$85° + 101° = 186°$

Q9. $30 \div 5 = 6$

$6 \times 2 = 12$

$\pi \times 0.5 \times 24 = 12\pi$

$\pi \times 0.5 \times 12 = 6\pi$

$12\pi + 6\pi + 12 + 12 + 6 + 6 = (18\pi + 36)$ cm

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Q10. $98 - 48 = 50$

$82 - 80 = 2$

$50 \div 2 = 25$

Q11. a) $2m + m + 5 + 3m - 2 = 6m + 3$

$(6m + 3) \div 3 = \$(2m + 1)$

b) $2 \times 4 + 1 = \$9$

c) True, Not possible to tell.

Q12. a) $75 \div 5 = 15$

$15 \times 2 = 30\%$

b) $60 \div 15 = 4$

$4 \times 100 = 400$

Q13.

T : P : Total	T : P : Total
2 : 3 : 5	2 : 1 : 3
6 : 9 : 15	10 : 5 : 15

$120 \div 4 = 30$

$30 \times 6 = \$180$

Q14. a) $19 - 4 = 5$

$15 \div 3 = 5$

b) $20 \times 20 = 400$

c) $\frac{58}{400} \times 100\% = 14.5\ \%$

Q15. $\sqrt{196} = 14$

$\frac{1}{4} \times 3.14 \times 14 \times 14 = 153.86$

$153.86 \div 2 = 76.93$

$76.93 - (\frac{1}{2} \times 14 \times 7) = 27.93\ cm^2$

Q16. a) $700 \times 6 = 4.2\ell$

b) $60\% \times 35 \times 20 \times 50 = 21000$

$700 \times 6 = 4200$

$2100 - 4200 = 16800$

$700 - 500 = 200$

$16800 \div 200 = 84$

$84 + 6 = 90mins$

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Q17. a) Tuesday

b) $20 - 18 = 2$

$\frac{2}{20} \times 100\% = 10\%$

c) $12 + 8 + 20 + 18 + 10 = 68$

$1.60 \div 8 = 0.20$

$0.20 \times 68 = \$13.60$

END