NAN HUA PRIMARY SCHOOL
MID YEAR EXAMINATION – 2022
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 for Questions 1-15.
6. The use of calculators is **NOT** allowed.

Name : _____ ( )

Class : 6_____

Date : 12 May 2022 **Parent's Signature :**_____

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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 and shade your answer (1, 2, 3 or 4) on the Optical Answer Sheet. (20 marks)

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1. The cost of a car, correct to the nearest thousand, is $150 000.

   Which one of the following could be the actual cost of the car?

   (1) $148 599

   (2) $149 499

   (3) $150 499

   (4) $150 599

2. Which one of the following is **not** a common factor of 32 and 64?

   (1) 1

   (2) 16

   (3) 64

   (4) 4

3. Express $1\frac{2}{25}$ as a decimal.

   (1) 1.02

   (2) 1.08

   (3) 1.2

   (4) 1.8

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4. Which one of the following is the same as $\frac{5}{14}$?

(1) $\frac{1}{5} \times 14$

(2) $\frac{1}{14} \times 5$

(3) $\frac{2}{5} \times 35$

(4) $\frac{5}{7} \times 14$

5. Find the value of $\frac{2}{9} \times \frac{3}{10}$.

(1) $\frac{1}{15}$

(2) $\frac{5}{19}$

(3) $\frac{6}{19}$

(4) $\frac{20}{27}$

6. How many $\frac{3}{8}$s are there in 6 wholes?

(1) 16

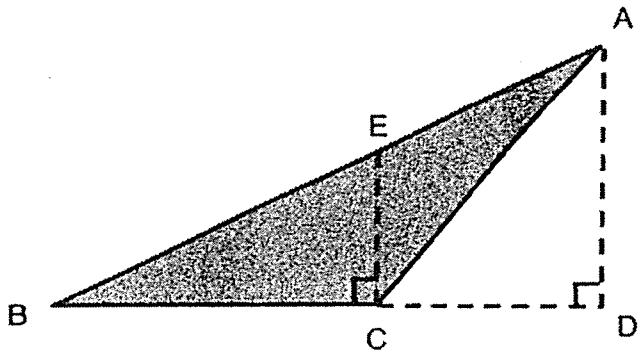
(2) 18

(3) 24

(4) 48

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7. Given that the base of triangle ABC is BC, find the height that is related to the base BC.



(1) AC

(2) AD

(3) AB

(4) CE

8. How many of the following letters has/have only 1 line of symmetry?

M A N Y

(1) 1

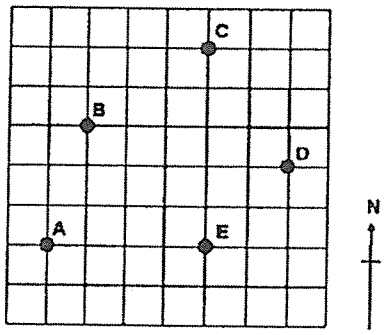
(2) 2

(3) 3

(4) 4

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9. In the square grid below, Point _____ is north-east of Point E.



(1) A

(2) B

(3) C

(4) D

10. At a seminar, the number of male participants was $\frac{5}{7}$ of the number of female participants. What is the ratio of the number of female participants to the total number of participants?

(1) 5 : 7

(2) 7 : 5

(3) 5 : 12

(4) 7 : 12

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11. John had some fruit juice. He drank $\frac{1}{4}$ of it and his two sisters shared the remainder equally. What fraction of the original amount of fruit juice did each of his sisters get?

(1) $\frac{3}{4}$

(2) $\frac{1}{2}$

(3) $\frac{3}{8}$

(4) $\frac{1}{8}$

12. Mrs Tan had 6 kg of flour. She used 4 kg and 800 g to make muffins. How much flour was left? Give your answer in kg.

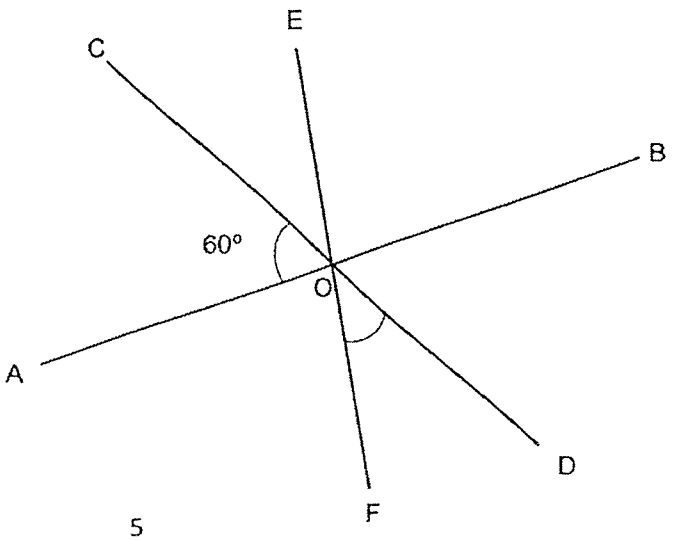
(1) 1.002 kg

(2) 2 kg

(3) 1.02 kg

(4) 1.2 kg

13. In the figure below, AB, CD and EF are straight lines. ∠AOC is 60°. ∠BOE is twice of ∠FOD. What is ∠FOD?



(1) 20°

(2) 30°

(3) 40°

(4) 60°

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14. A bus can either take 48 children or 32 adults. If there are already 25 children and 6 adults on the bus, how many more children can be on the bus?

(1) 9

(2) 14

(3) 23

(4) 34

15. The table below shows the number of students in a Primary 6 class. Some of the information is missing.

	With spectacles	Without spectacles	Total
Boys	10		
Girls	15		20
Total			38

Based on the given information, which one of the following statements is correct?

(1) $\frac{1}{4}$ of the girls are without spectacles.

(2) 60% of the students with spectacles are boys.

(3) There are more girls than boys who are without spectacles.

(4) The ratio of the number of girls to the number of boys in the Primary 6 class is 9 : 10.

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NAN HUA PRIMARY SCHOOL
MID YEAR EXAMINATION – 2022
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_____

Date : 12 May 2022 **Parent's Signature:**_____

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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 spac

16. Find the value of $44 - 12 \div 4 + 2 \times 4$.

Ans : _____

17. What is the third common multiple of 5 and 8?

Ans : _____

18. Arrange the following fractions from the greatest to the smallest.

$$\frac{5}{9} \quad , \quad \frac{5}{12} \quad , \quad \frac{5}{6}$$

Ans: _____, _____, _____

(greatest)

Subtotal	/ 3

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19. The table shows the number of trading cards that Aini, Bala and Caili have.

Name	No. of trading cards
Aini	18
Bala	12
Caili	24

Using the information from the table, complete the picture graph by drawing the correct number of triangles for Aini and Bala.

Aini and Bala	
Caili	△△△△

Each △ represents 6 trading cards.

20. A concert started at 9.25 a.m. and ended at 12.05 p.m..

Find the duration of the concert.

Ans : _____h_____min

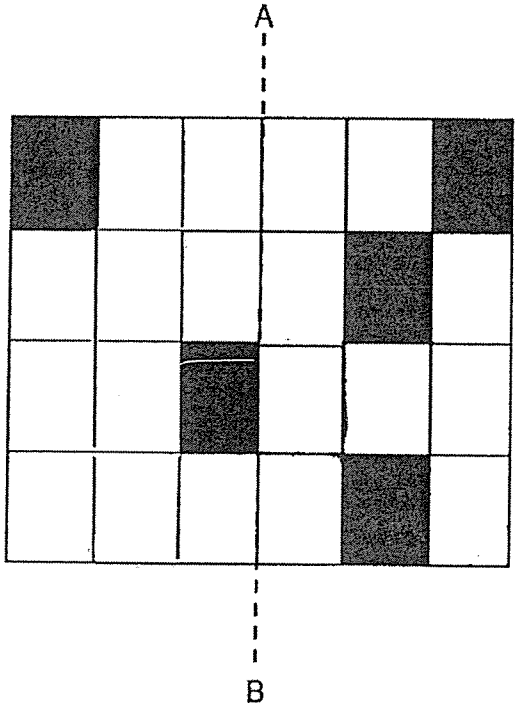
Subtotal	/ 2

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

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21. In the figure below, AB is the line of symmetry. Shade 3 more rectangles to make it symmetrical.



22. Using the line AB provided below, construct ∠BAC = 80°.

A B

Subtotal	/ 4

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23. The ratio of Michael's age to his daughter's age is 2 : 1.

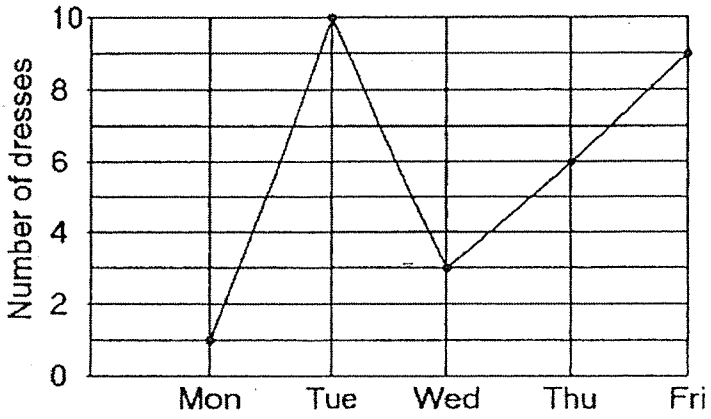
10 years ago, the ratio of Michael's age to his daughter's age was 8 : 3.
How old is Michael now?

Ans : _____

24. Mdm Lim buys some boxes of coffee powder and some packets of sugar that weigh 21 kg altogether.
When 6 packets of sugar are removed, the mass becomes 17.4 kg.
What is the mass of each packet of sugar?

Ans : _____kg

25. The line graph shows the number of dresses sold from Monday to Friday.



What was the percentage decrease in the number of dresses sold on Wednesday compared to the number of dresses sold on Tuesday?

Ans : _____

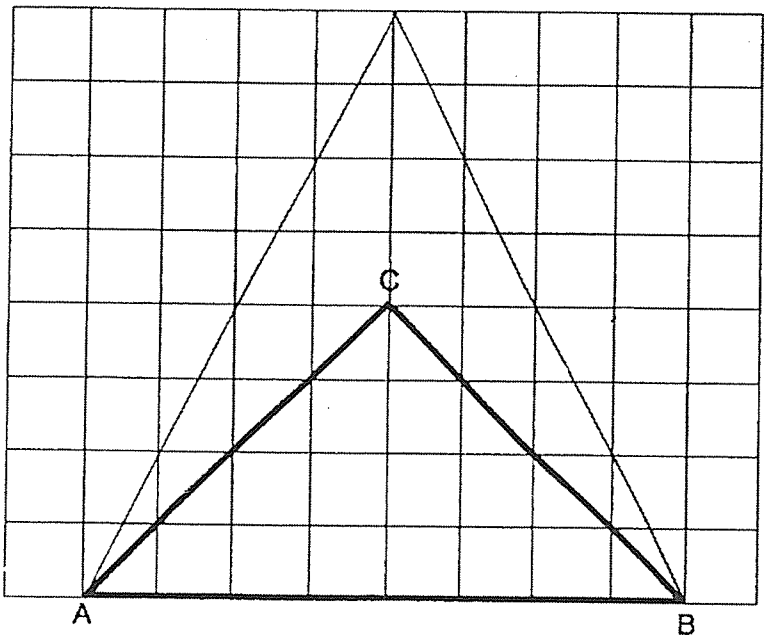
Subtotal	/ 6

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26. A triangle, ABC, is drawn on the square grid.

Draw a triangle, ABD, which is twice the area of Triangle ABC.

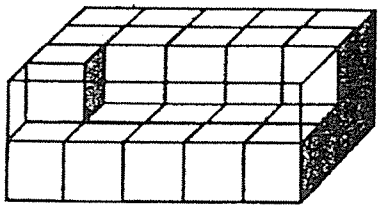
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27. The figure shows a rectangular glass tank partly filled with identical cubes.

Amanda poured 243 cm^3 water into the tank to fill it to the brim.

Find the volume of a cube.

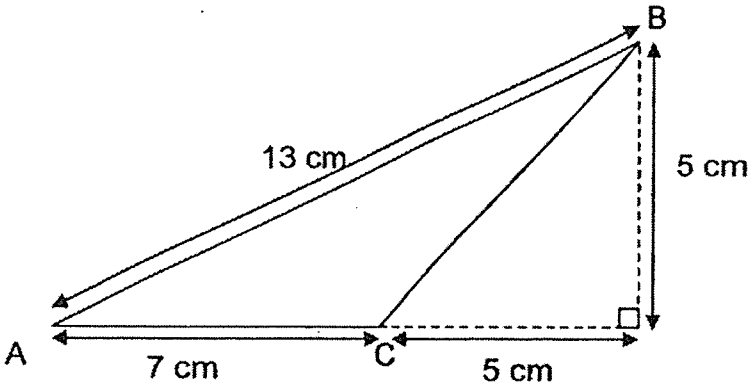


Ans : _____ cm^3

Subtotal	/ 4

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28. Find the area of triangle ABC as shown below.



Ans : _____ cm²

29. The average mark of a group of 6 students is 88.

Mathew, who scores 72 mark, joins the group.

Each of the statements below is either true, false or impossible to tell from the information given. For each statement, put a tick (√) to indicate your answer.

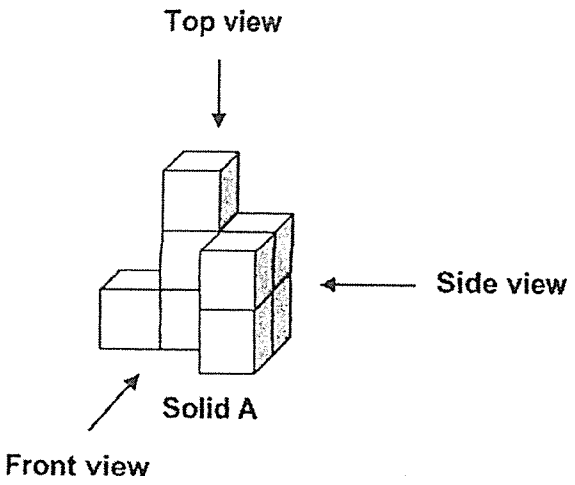
Statement	True	False	Not possible to tell
The average mark will decrease when Mathew joins the group.			
Each of the 6 students scores more than Mathew.			

Subtotal	/ 4

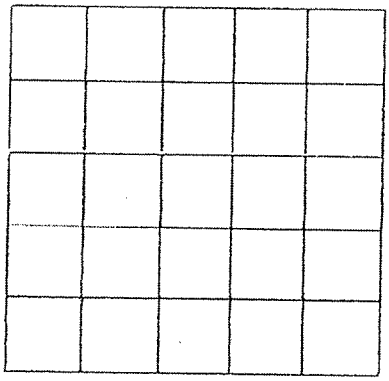
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30. Solid A is made of 1-cm cubes.

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Draw on the square grid below the top view of Solid A.



END OF PAPER 1

Subtotal	/ 2

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NAN HUA PRIMARY SCHOOL
MID YEAR EXAMINATION – 2022
PRIMARY 6

MATHEMATICS
Paper 2

Total Time for Paper 2: 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. Write your answers in this booklet.
6. The use of an approved calculator is expected, where appropriate.

Marks Obtained

Total	Max Mark
	55

Name : _____( )

Class : 6_____

Date : 12 May 2022

Parent's Signature :_____

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Paper 2 (55 marks)

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

1. The table shows the results of 4 swimmers in a competition.

   What is their average timing?

Name	Timing
Abigail	60 s
Ben	50 s
Cleo	58 s
David	55 s

Ans: _____ s

2. The ratio of the number of boys to the number of girls at a carnival was 4 : 5 at first. What was the new ratio of the number of boys to the number of girls at the carnival after $\frac{1}{2}$ of the number of boys left the carnival?

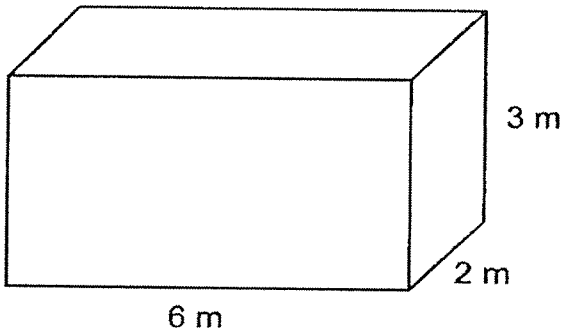
Ans: _____

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3. A machine prints 350 pieces of paper in 21 minutes. At this rate, how long does the machine take to print 150 pieces of paper?

Ans: _____ min

4. A water tank measuring 6 m by 2 m by 3 m is completely filled with water. What is the volume of water in the tank?



Ans: _____ m^3

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Do not write in this space

5. At first, the average mass of a group of students was 28 kg. A new boy with a mass of 48 kg joined them and the new average mass of the students was increased to 33 kg. Find the number of students in the group at first.

Ans: _____

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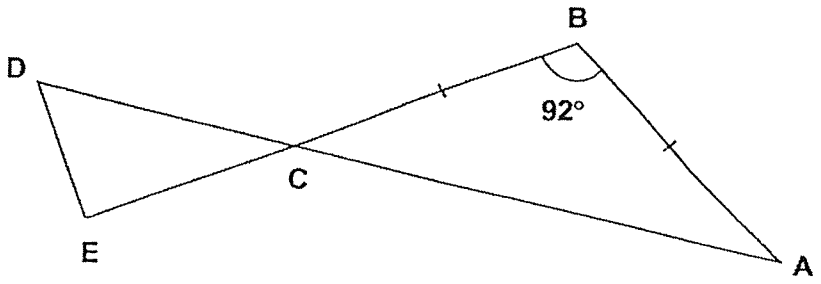
For questions **6** to **17**, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part-question. (45 marks)

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6. In the figure below, ABC is an isosceles triangle.

   ACD and BCE are straight lines. $\angle ABC = 92°$

   Find the sum of $\angle CED$ and $\angle CDE$.

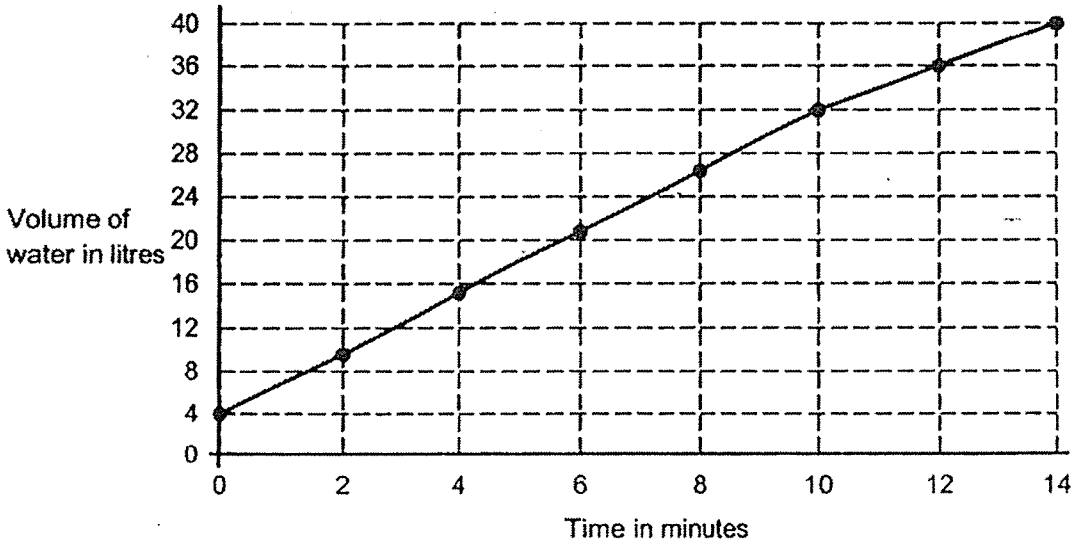


Ans: _____[3]

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7. The line graph below shows the volume of water in a tank over a period of 14 minutes.

(a) What is the volume of water in the tank at the end of the 14 minutes? (Give your answer in litres)



Ans: (a) _____[1]

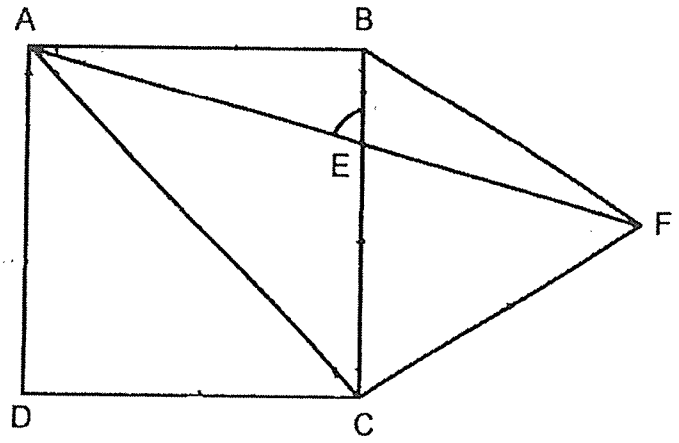
(b) Next, water is drained out from the tank till it is completely empty. How long does it take for the tank to be completely empty if water is drained out at a rate of 0.8 litre per minute?

Ans: (b) _____[2]

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8. In the figure below, ABCD is a square and BCF is an equilateral triangle. AEF is a straight line. Find ∠AEB.



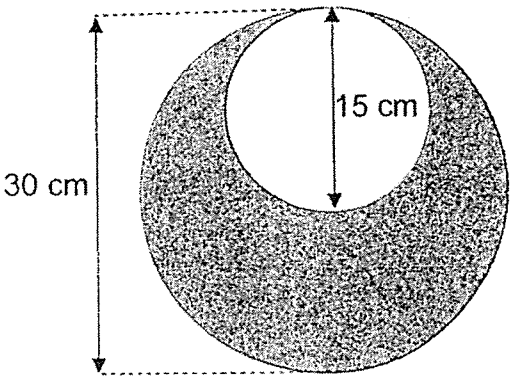
Ans: _____ [3]

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9. The figure is formed by two circles.

The diameter of the bigger circle is 30 cm and the diameter of the smaller circle is 15 cm.

Use the calculator value of π to find the perimeter of the shaded part. Round your answer to 2 decimal places.



Do not write in this space

Ans: _____ [3]

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10. A survey was conducted to find out the price of eggs sold at a supermarket.

(a) The price of a tray of 10 eggs was $2.40 last year. It increased to $3 this year.

What was the percentage increase in the price of 10 eggs this year compared to last year?

Ans: (a)_____[1]

(b) There was a 44% increase in the price of a tray of 30 eggs this year compared to last year.
If the price of a tray of 30 eggs was $5 last year, what was the price this year?

Ans: (b) _____[2]

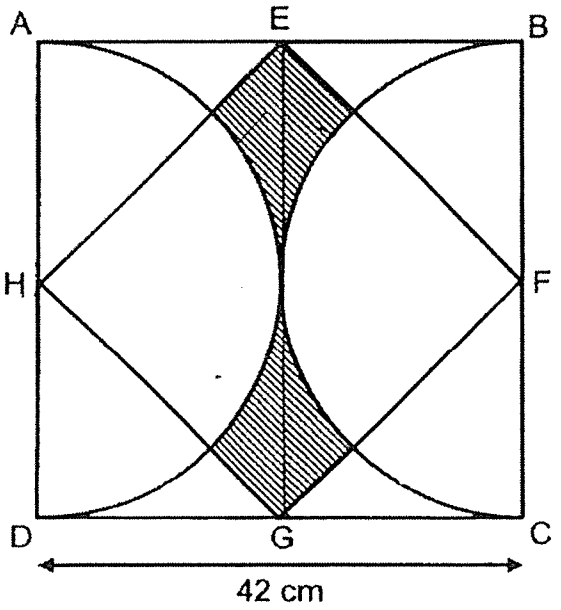
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11. The figure is made up of 2 squares, ABCD and EFGH, and 2 identical semicircles. E is the mid-point of AB and G is the mid-point of DC.

Find the total area of the shaded parts.

(Take $\pi = \frac{22}{7}$)



Ans: _____ [4]

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12. Mdm Wati bought a total of 60 pears and mangoes. If she exchanged each mango for 3 pears, she would have 116 pears in all.

(a) How many pears did she buy?

Ans: (a) _____ [3]

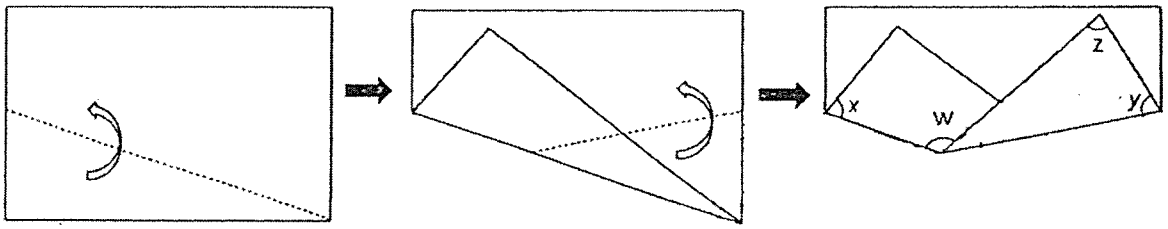
(b) How many mangoes did she buy?

Ans: (b) _____ [1]

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13. A rectangular piece of paper is folded twice along the dotted lines as shown in the figures below.

Do not write in this space



Given that $\angle y = 76°$ and $\angle z = 75°$, find

(a) $\angle x$

Ans: (a) _____[2]

(b) $\angle w$

Ans: (b) _____[2]

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14. The table below shows the number of books read by each student in a class of 35 students. One of the numbers in the table is covered by an ink blot.

Number of books read by each student	0	6	
Number of students	15	9	11

The average number of books read by the students in the class is 5.

What is the number covered by the ink blot?

Ans: _____ [4]

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15. Isaac and Caleb baked a total number of 1085 muffins altogether. After both sold an equal number of muffins, Isaac had $\frac{1}{4}$ of his muffins and Caleb had $\frac{1}{5}$ of his muffins left. Caleb donated his remaining muffins to charity.

Do not write in this space

(a) How many muffins were sold altogether?

Ans: (a) _____ [2]

(b) How many muffins did Caleb donate to charity?

Ans: (b) _____ [2]

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16. Squares are used to form the pattern below.

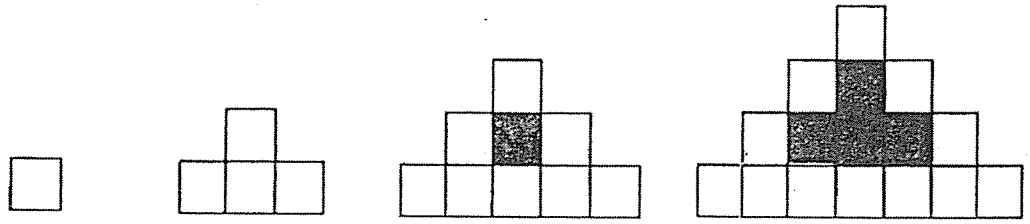


Figure 1 Figure 2 Figure 3 Figure 4

(a) What is the total number of squares in Figure 5?

Ans: (a)_____[1]

(b) Which figure is made up of 40 white squares?

Ans: (b)_____[2]

(c) How many shaded squares are there in Figure 30?

Ans: (c)_____[2]

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17. Mdm Ng loves to watch movies. She downloads 80 movies every month.

(a) Study the table below and help Mdm Ng decide which plan is cheaper for her to subscribe.

	Plan A	Plan B
Monthly subscription	$20 (Free 10 movies)	$27 (Free 20 movies)
Charge per downloaded movie	$2.50	$3.00

Ans: (a) _____[3]

(b) There is an additional 7% GST on the plan that Mdm Ng is paying. How much does she have to pay for the plan including GST?

Ans: (b) _____[2]

----------End of Paper----------

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NAN HUA PRIMARY SCHOOL
MID YEAR EXAMINATION 2022
MATHEMATICS
PRIMARY 6

Paper 1

Booklet A (20 marks)

1)	3	6)	1	11)	3
2)	3	7)	2	12)	4
3)	2	8)	3	13)	3
4)	2	9)	4	14)	2
5)	1	10)	4	15)	1

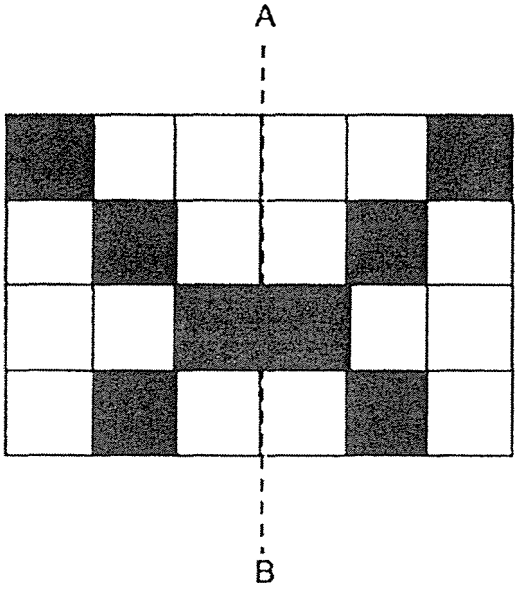
Booklet B (25 marks)

Questions 16 to 20 carry 1 mark each.
Questions 21 to 30 carry 2 marks each.

16)	49
17)	120
18)	$\frac{5}{6}, \frac{5}{9}, \frac{5}{12}$
19)	▲▲▲▲▲
20)	2h 40min

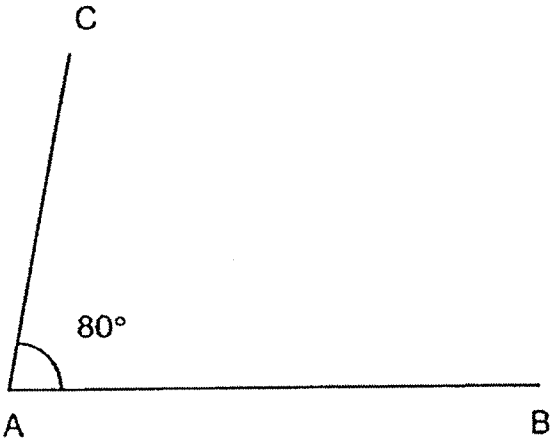
Note: Q21 to 30 carry 2 marks each

21.



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22.



23. Now,

Michael : Daughter : Difference (unchanged)

= 2 : 1 : 1

= 10 : 5 : 5

= 50 : 25 : 25

10 years ago,

Michael : Daughter : Difference (unchanged)

= 8 : 3 : 5

= 40 : 15 : 25

Michael is **50 years old** now.

24. 6 packets → 21-17.4 = 3.6 kg

1 packet → 3.6 ÷ 6 = **0.6 kg**

25. Wednesday = 3 Tuesday = 10

% decrease = $\frac{10-3}{10}$ x100%= **70%**

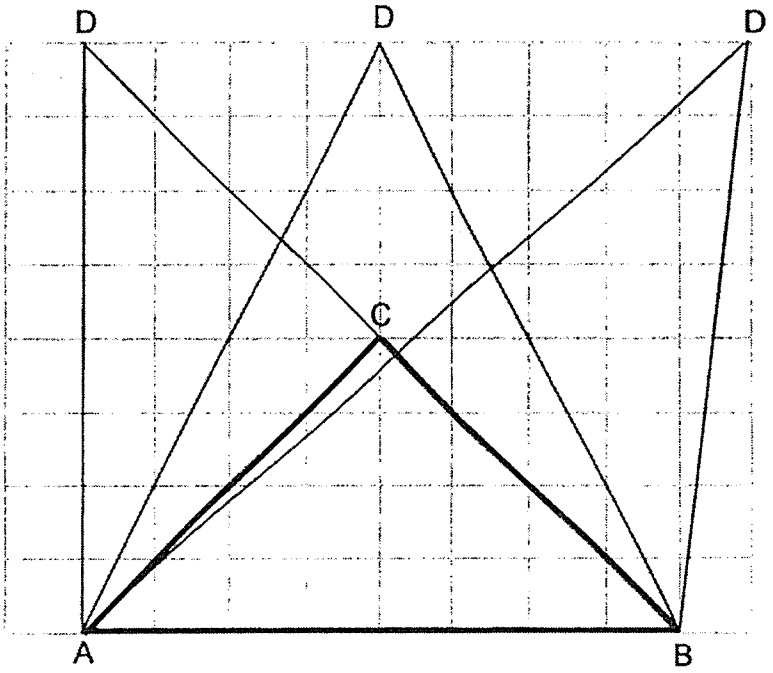
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Paper 2

1.	(60+50+58+55) ÷ 4 = **55.75**
2.	$\frac{1}{2}$ of 4u = 2u New ratio = **2 : 5**
3.	350 pieces →21 min 1 piece → $\frac{21}{350}$ min 150 pieces → $\frac{21}{350}$ x 150 = **9 min**
4.	6m x 2m x 3m = **36 m^3**
5.	33-28 = 5 48-33 = 15 15÷5 =**3**
6.	∠DCE =∠BCA = (180° – 92°) / 2 = 44° ∠CED+∠CDE = 180° – 44° = **136°**
7.	a) **40 litres** b) 0.8 litre → 1 min 1 litre → (1÷ 0.8) min = 1.25 min 40 litres → 1.25 min x 40 = **50 min**
8.	∠ABF = 90° + 60° = 150° ∠BAE = (180° – 150°) / 2 = 15° ∠AEB = 180° – 90° – 15° = **75°**
9.	π × 30 = 30π π × 15 = 15π **Perimeter** = 30π + 15π = 45π ≈ **141.37 cm**
10.	(a) Percentage increase= $\frac{300-240}{240}$ × 100% = **25%** (b) 100% → \$5 144% → $\frac{\$5}{100}$ x 144 = **\$7.20**

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26. Any triangle with base AB and height 8 units. 3 examples as shown below:



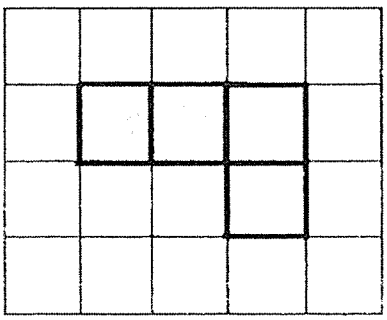
27. 5 x 4 x 2 = 40 cubes
Existing cubes = 31
40 – 31 = 9 cubes → 243 cm³
Volume of 1 cube → 243÷9 =**27 cm³**

28. Area of ΔABC= ½ x 7 cm x 5 cm = **17.5 cm²** / $17\frac{1}{2}$ cm²

29.

Statement	True	False	Not possible to tell
The average mark will decrease when Mathew joins the group.	√		
Each of the 6 students scores more than Mathew.			√

30.



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11.

$42 \times 42 = 1764$

$\frac{22}{7} \times 21 \times 21 = 1386$

Area = $(1764 - 1386) \div 2 =$ **189 cm²**

12.

(a) $60 \times 3 = 180$

$180 - 116 = 64$

$64 \div (3-1) =$ **32 pears**

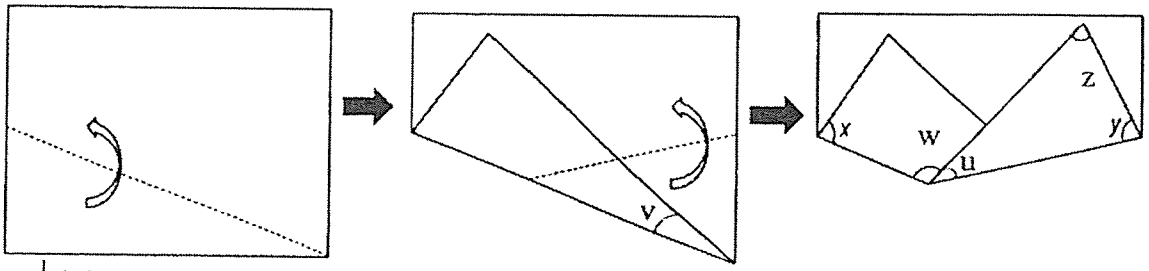
(b) $60 - 32 =$ **28 mangoes**

Or

Guess & Check

Pear	Mango	Mango→Pear	New Pear	Check
30	30	30x3 = 90	90 + 30 =120	x
31	29	29x3=87	87 + 31 = 118	x
(a) 32	(b) 28	28x3=84	84 + 32 = 116	✓

13.



(a) $\angle v = 90° - 75° = 15°$

$\angle x = 90° - 15° =$ **75°**

(b) $\angle u = 180° - 76° - 75° = 29°$

$\angle w = 180° - 29° - 29° =$ **122°**

14.

$35 \times 5 = 175$

$175 - 6x9 = 121$

$121 \div 11 =$ **11**

15.

$\frac{3}{4}$ Isaac = $\frac{4}{5}$ Caleb

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	$\frac{12}{16}$ Isaac = $\frac{12}{15}$ Caleb 31u = 1085 1u = 1085 ÷ 31 = 35 (a) 24u = 35 x 24 = **840** (b) 3u = 35 × 3 = **105**
16.	(a) 5 x 5 = **25** (b) 4n – 4 = 40 n = (40 + 4) ÷ 4 = **11** (c) $(n - 2)^2 = (30 – 2)^2$ = 28 x 28 = **784**
17.	(a) Plan A : 80 – 10 = 70 70 x \$2.50 + \$20 = \$195 Plan B : 80 – 20 = 60 60 x \$3 + \$27 = \$207 **Plan A is cheaper.** (b)7% x \$195 = \$13.65 \$195 + \$13.65 = **\$208.65**

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