AI TONG SCHOOL

2023

PRELIMINARY EXAMINATION
PRIMARY 6

MATHEMATICS
PAPER 1
(Booklet A)

DURATION (Booklets A and B) : 1 h

DATE : 21 AUGUST 2023

INSTRUCTIONS

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Use a 2B pencil to shade your answers in the Optical Answer Sheet (OAS).
5. The use of calculators is **NOT** allowed.

Name: _____( )

Class: Primary 6 _____

Parent's Signature : _____	**Marks:**
Date : _____	**Paper 1 (Booklet A)** ____/20

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Paper 1
Booklet A

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). Shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet. (20 marks)

---

1 5 809 621 = 5 000 000 + _____ + 9000 + 600 + 20 + 1

What is the missing number in the blank?

(1) 800
(2) 8000
(3) 80 000
(4) 800 000

2 Which of the following numbers are common factors of 16 and 24?

(1) 8 and 12
(2) 2 and 3
(3) 4 and 6
(4) 4 and 8

3 Express 0.6 as a percentage.

(1) 0.006%
(2) 0.06%
(3) 6%
(4) 60%

4 Carol is 15 years old. She is z years older than Abbie. How old is Abbie?

(1) $(15 + z)$ years old

(2) $(15 - z)$ years old

(3) $(z - 15)$ years old

(4) $(15z)$ years old

5 Which of the following fractions has the largest value?

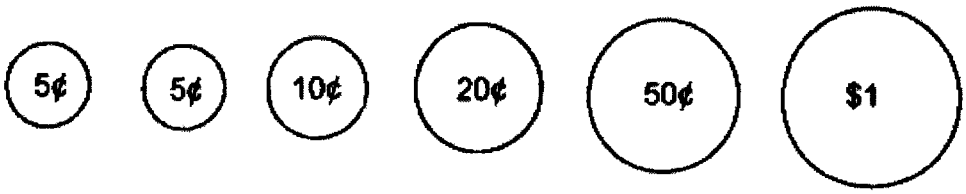
(1) $\frac{7}{9}$

(2) $\frac{5}{11}$

(3) $\frac{4}{7}$

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

6 Ravi had 6 coins in his wallet as shown. He took out only 4 coins to pay the exact amount for a bun.
Which of the following amounts is **not** a possible cost of the bun?



(1) $1.65

(2) $1.40

(3) $1.35

(4) $1.30

7 The average of 6 numbers is 14. When a 7th number is added, the average becomes 16. What is the 7th number?

(1) 30

(2) 28

(3) 14

(4) 12

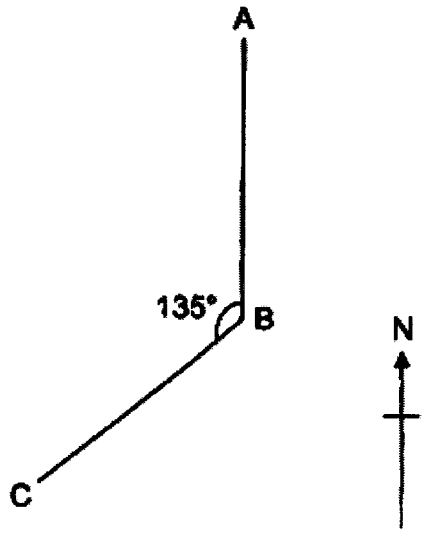
8 In the diagram, point A is north of point B and ∠ABC = 135°.
In what direction is point C from point B?

(1) North-East

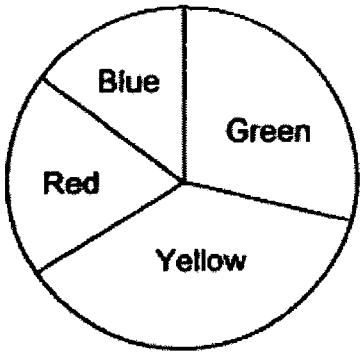
(2) North-West

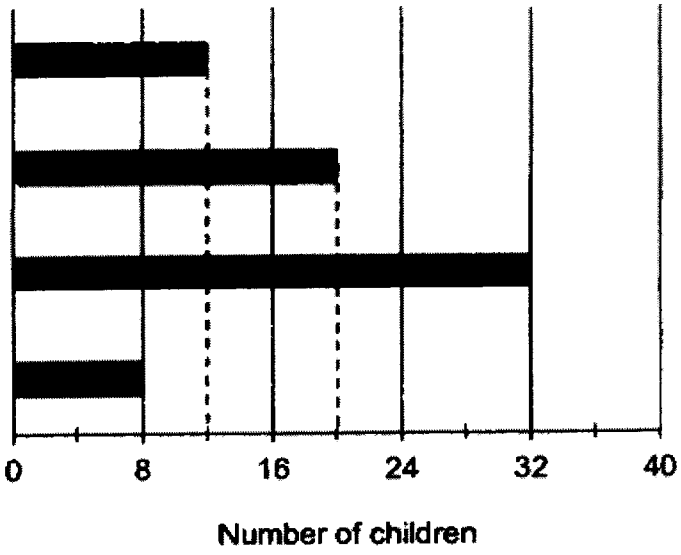
(3) South-East

(4) South-West



9 The pie chart shows what a group of children has chosen as their favourite colour. The same information is shown in a bar graph, but the names of the colours are not shown on the bar graph.





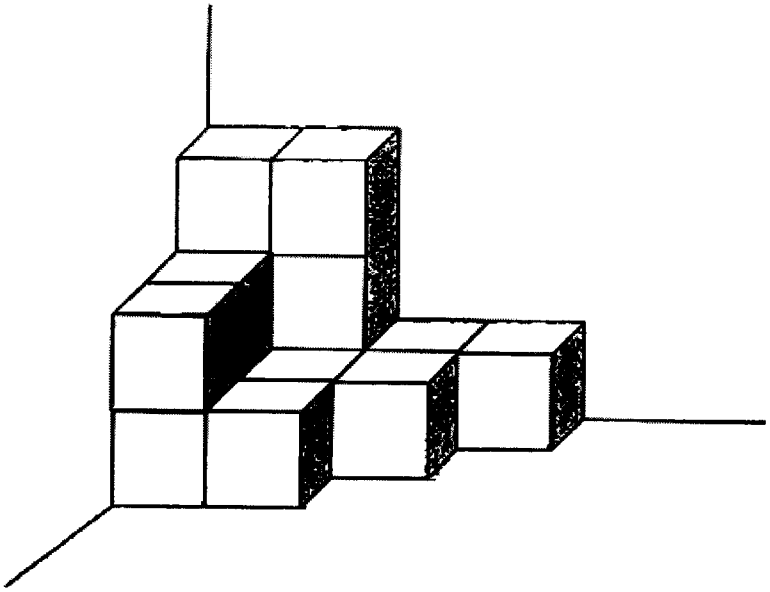
How many children chose yellow and red as their favourite colour?

(1) 20
(2) 40
(3) 44
(4) 46

10 There were 84 adults. 51 of them were men.
What was the ratio of the number of women to the number of men?

(1) 11 : 17
(2) 17 : 28
(3) 17 : 11
(4) 28 : 17

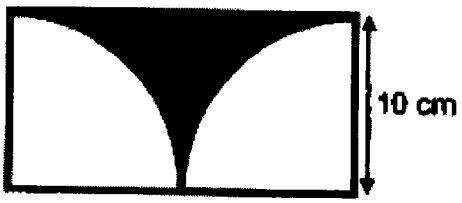
11 The solid below is made up of 1-cm cubes.
How many more 1-cm cubes are needed to build a cube of edge 4 cm?



(1) 28
(2) 36
(3) 49
(4) 53

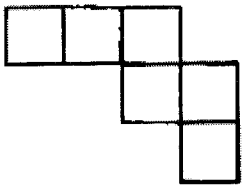
12 The figure is made up of 2 identical quarter circles in a rectangle.
Find the perimeter of the shaded part. (Take π = 3.14)

(1) 31.4 cm
(2) 35.7 cm
(3) 51.4 cm
(4) 78.5 cm

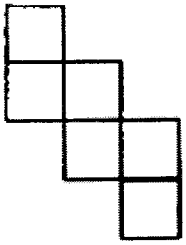


13 Which of the following is **not** a net of a cube?

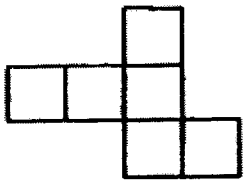
(1)



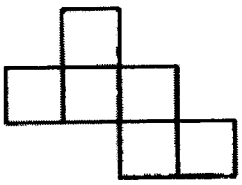
(2)



(3)



(4)



14 Meifang spent 20% of her money on a shirt. She used the rest of the money to buy a bag and a necklace. The bag cost $24 more than the shirt. The necklace cost $72. Find the cost of the bag.

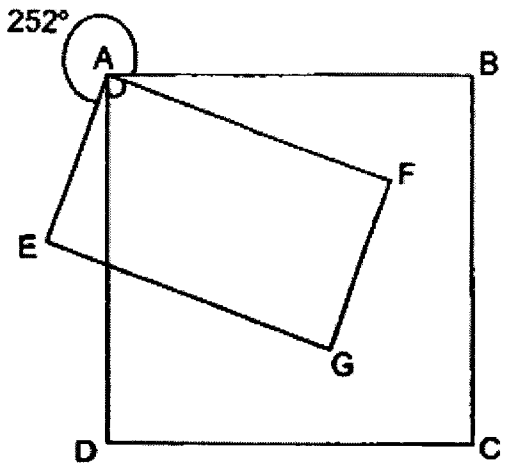
(1) $56

(2) $48

(3) $40

(4) $32

15 In the figure, ABCD is a square, EAFG is a rectangle and ∠EAB = 252°. Find ∠DAF.



(1) 108°

(2) 72°

(3) 45°

(4) 18°

AI TONG SCHOOL

2023

PRELIMINARY EXAMINATION
PRIMARY 6

MATHEMATICS
PAPER 1
(Booklet B)

DURATION (Booklets A and B) : 1 h

DATE : 21 AUGUST 2023

INSTRUCTIONS

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Use a dark blue or black ballpoint pen to write your answer in the space provided for each question.
5. Do not use correction fluid/tape or highlighters.
6. The use of calculators is **NOT** allowed.

Parent's signature:

_____

Marks:

Paper 1 (Booklet B)	**25**

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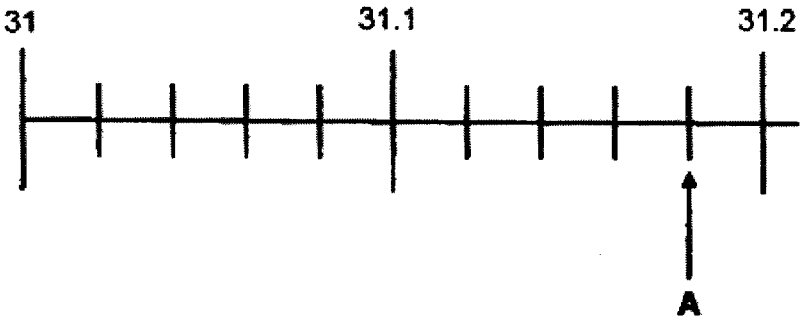
Paper 1
Booklet B

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 In the number line, what is the value represented by A?



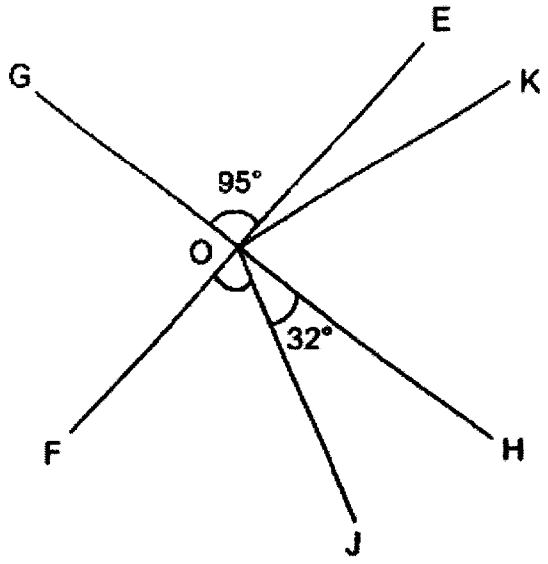
Ans: _____

17 **7 men donated a total of $1435.**
What is the average amount donated by each man?

Ans: $_____

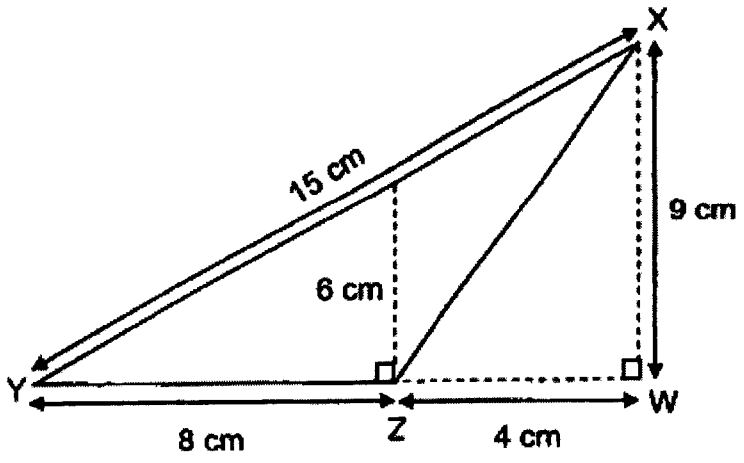
Do not write in this space

18 GH and EF are straight lines. ∠GOE = 95° and ∠JOH = 32°. Find ∠FOJ.



Ans: _____ °

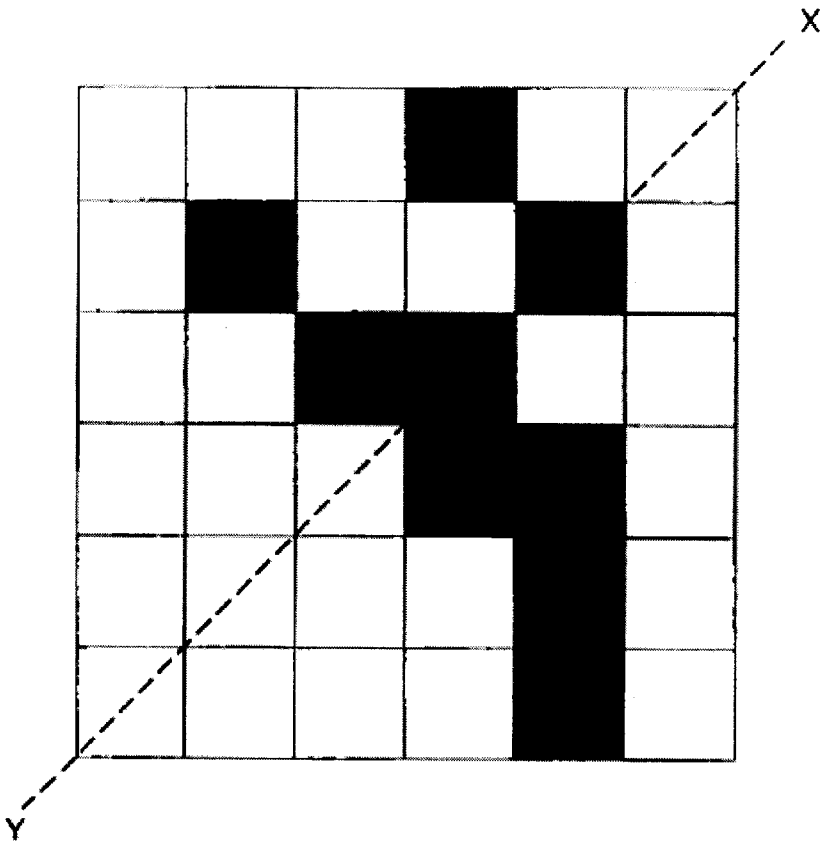
19 In the figure below, find the area of Triangle XYZ.



Ans: _____ cm^2

Do not write in this space

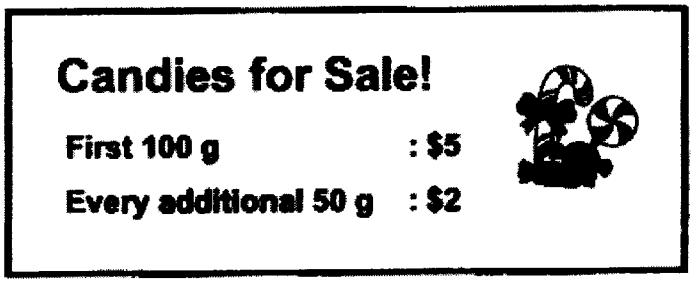
20 The figure below is made up of identical squares. Shade three more squares to form a symmetric figure with XY as the line of symmetry.



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

Do not write in this space

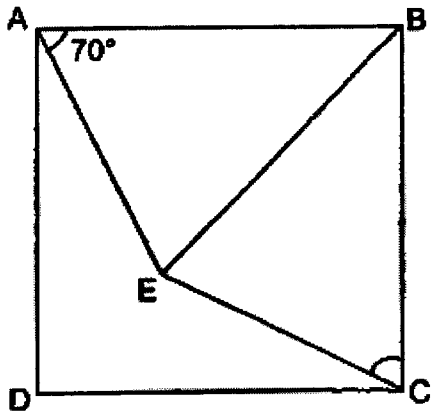
21 Candies were sold by mass as shown.



Rashid bought a packet of candies which weighed 250 g.
How much did he pay?

Ans: $ _____

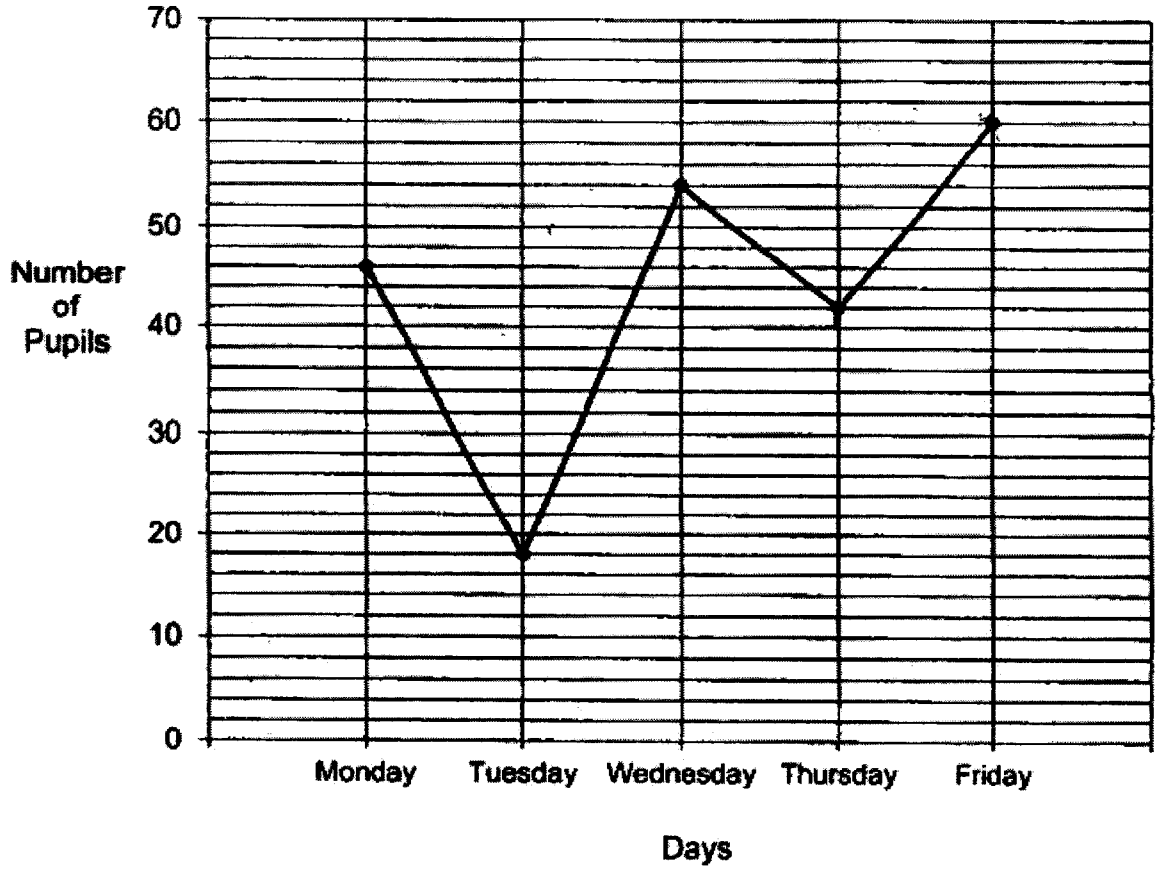
22 In the figure, ABCD is a square. AB = EB and ∠BAE = 70°. Find ∠BCE.



Ans: _____°

Do not write in this space

23 A group of pupils volunteered at an old folks' home for 5 days. The line graph shows their attendance at the old folks' home from Monday to Friday. All pupils turned up on Friday.



On which day were 30% of the pupils absent from the old folks' home?

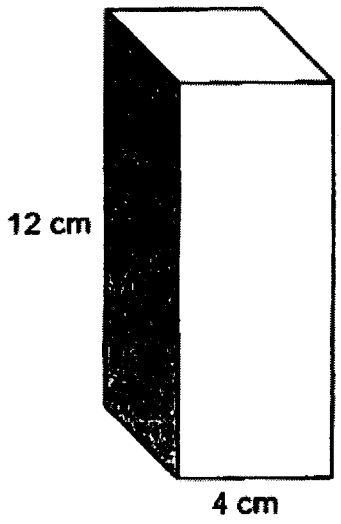
Ans: _____

Do not write in this space

24 Find the value of $5 + 4a + 18 - 2a$ when $a = 8$.

Ans: _____

25 A cuboid of height 12 cm has a square base of side 4 cm.
What is its volume?



Ans: _____ cm^3

Do not write in this space

26 Lydia bought $3n$ packets of stickers. Each packet contained 8 stickers. She gave 25 stickers to her friends and divided the rest of the stickers equally into 7 boxes. How many stickers were there in each box? Give your answer in terms of n in the simplest form.

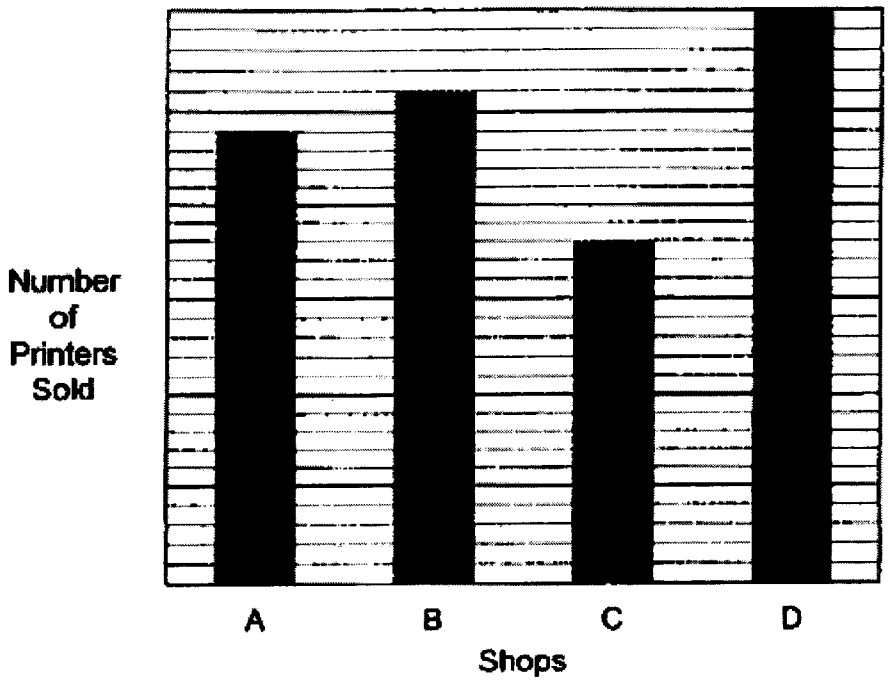
Ans: _____

27 At first, the ratio of Weijie's savings to Lihua's savings was 5 : 4. After each of them spent $40, the ratio of Weijie's savings to Lihua's savings became 13 : 10. What was Lihua's savings at first?

Ans: $ _____

Do not write in this space

28 The bar graph below shows the number of printers sold by 4 shops in a month.



What fraction of the total number of printers was sold by Shop B?
Give your answer in its simplest form.

Ans: _____

Do not write in this space

29 A total of 115 people stand in a queue for concert tickets. There are at least 3 men between any 2 women. What is the largest possible number of women in the queue?

Ans: _____

30 Hasnah had 5 boxes of identical erasers. At first, each of the boxes contained the same number of erasers. She took 21 erasers from each box. After that, the total number of erasers left in the 5 boxes was equal to the total number of erasers in 2 of the boxes at first.
What was the number of erasers in each box at first?

Ans: _____

End of Paper 1

AI TONG SCHOOL

2023
PRELIMINARY EXAMINATION

PRIMARY 6

MATHEMATICS
PAPER 2

DURATION : 1 h 30 min

DATE : 21 AUGUST 2023

INSTRUCTIONS

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

Parent's signature:

_____

Marks :

Paper 1	45
Paper 2	55
Total	100

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

Do not write in this space

1 Use all the digits 9, 2, 0, 3 to form

(a) the greatest possible odd number

(b) the number closest to 3000

Ans: (a) _____ [1]

(b) _____ [1]

2 A roll of ribbon is cut into three pieces in the ratio of 7 : 2 : 3. The shortest piece is 42 cm. What is the length of the longest piece of ribbon?

Ans: _____ cm

Do not write in this space

3 Figure 1 shows a right-angled triangle. Figure 2 is made up of 4 such identical triangles shown in Figure 1 and a square in the middle. Find the sum of ∠a, ∠b and ∠c.

Figure 1

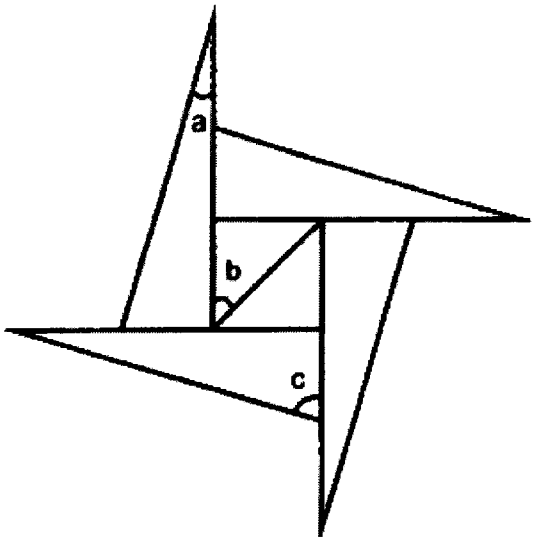


Figure 2

Ans: _____ °

4 The table below shows the grades of 120 students who joined a Mathematics competition. Grade A is the best grade and Grade E is the worst grade.

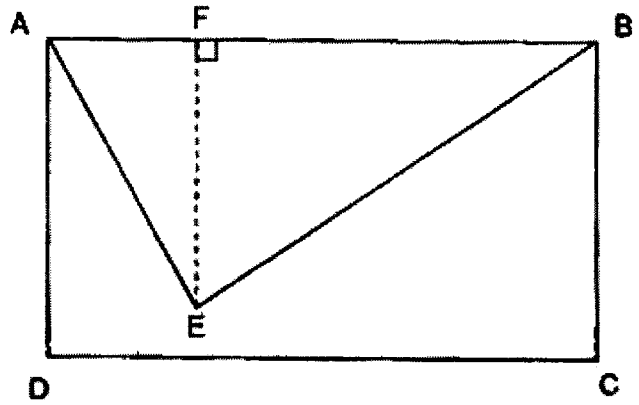
Grade	A	B	C	D	E
Number of students	15	27	54	18	6

Only $\frac{7}{20}$ of the students made it through to the second round.
What was the minimum grade required to go through to the second round?

Ans: _____

Do not write in this space

The area of rectangle ABCD is 1728 cm^2. The length of FE is $\frac{5}{6}$ of the length of AD. What is the area of the triangle ABE?

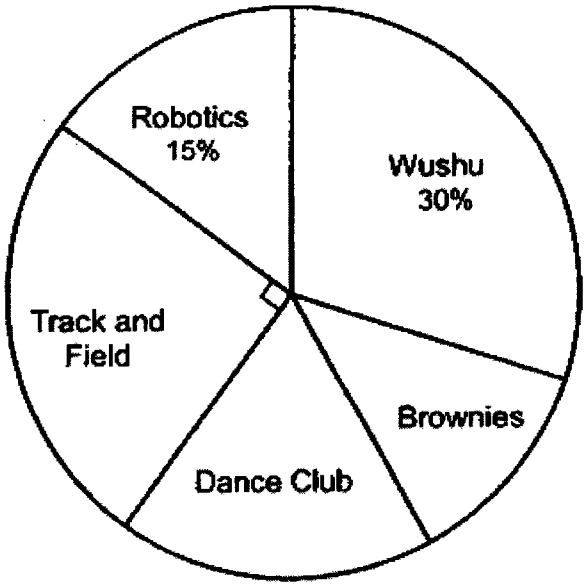


Ans: _____ cm^2

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 bracket [ ] at the end of each question or part-question. For questions which require units, give your answers in the units stated. **(45 marks)**

Do not write in this space

6 The pie chart shows the CCAs of 300 students in school.



(a) What percentage of the students are in Dance Club and Brownies?

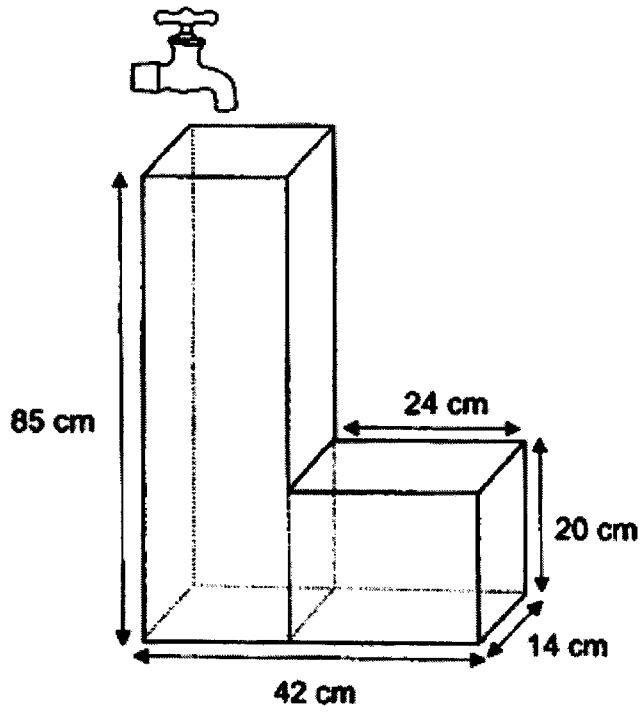
Ans: (a) _____ [1]

(b) The ratio of the number of students in Dance Club to the number of students in Brownies is 3 : 2. How many students are in Brownies?

Ans: (b) _____ [2]

Do not write in this space

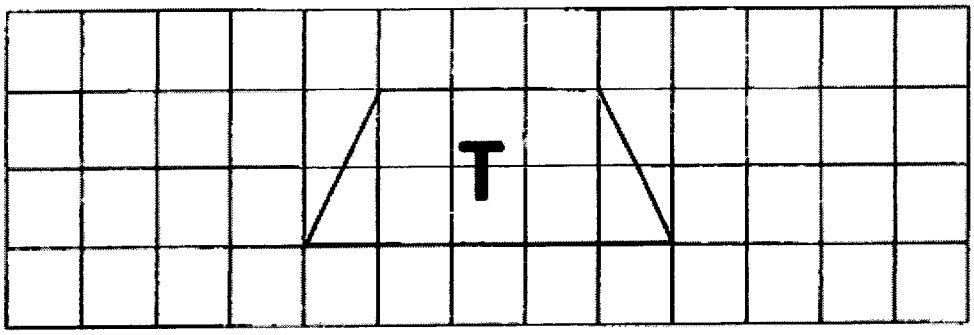
7 The figure below shows an empty container. All edges meet at right angles. When the tap is turned on, water flows into the container at a rate of 2.01 litres per minute. How much time is needed to fill the container completely?



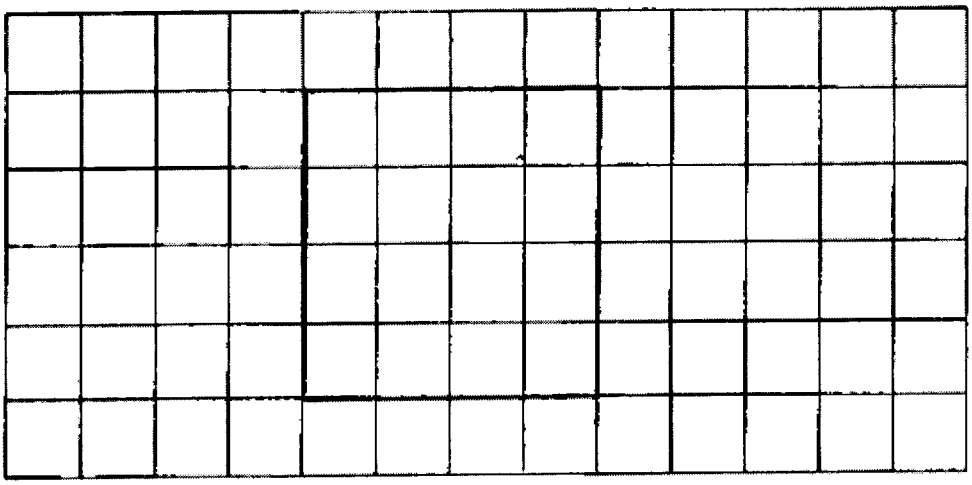
Ans: _____ [3]

Do not write in this pace

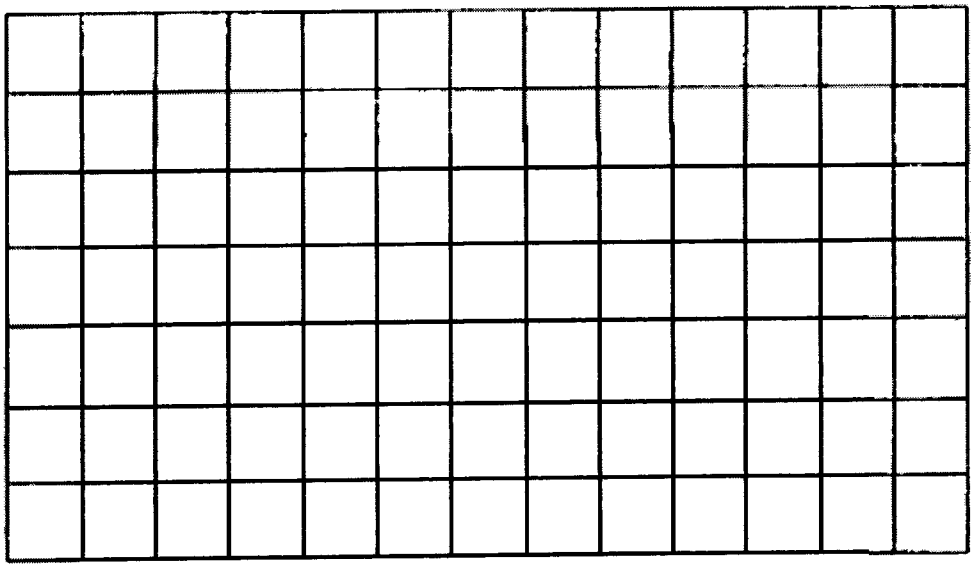
8 Trapezium T is drawn on the square grid below.



(a) In the square grid below, draw a square with twice the area of Trapezium T. [1]



(b) In the square grid below, draw a parallelogram with twice the perimeter of Trapezium T. [2]



Do not write in this space

9 There were 45 soccer balls, 30 basketballs and 68 ping pong balls in the PE room. After 80 balls were added, the number of soccer balls increased by 40% and the number of ping pong balls increased by 25%. What was the percentage increase in the number of basketballs?

Ans: _____ [3]

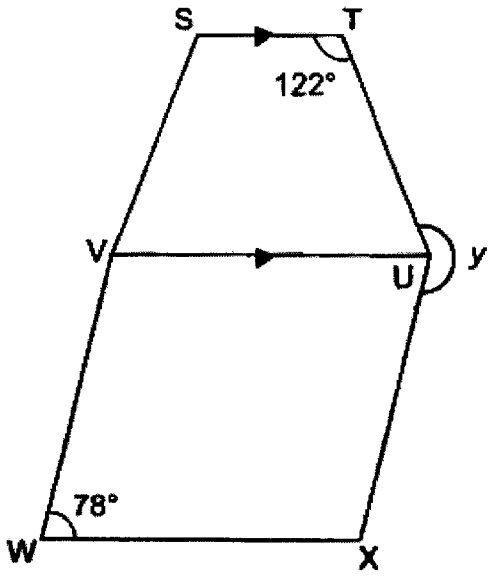
Do not write in this space

10 Both Farah and Jamil left their houses at the same time to go to the park. Farah travelled 20 km from her house to the park at an average speed of 30 km/h. Jamil travelled from his house at an average speed of 42 km/h and reached the park 15 minutes later than Farah. What was the distance between Jamil's home and the park?

Ans: _____ [3]

Do not write in this space

11 STUV is a trapezium. UVWX is a rhombus. Find $\angle y$.



Ans: _____ [3]

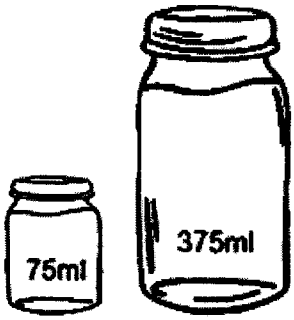
Do not write in this space

12 There were a total of 2120 students at the school parade square at first. After 536 boys and $\frac{1}{4}$ of the girls left, the ratio of the number of boys to the number of girls became 4 : 9. How many more girls than boys were there at the parade square in the end?

Ans: _____ [4]

Do not write in this space

13 Charlie poured pancake mixture into two types of containers with different capacities as shown below.



He poured half the mixture into big containers and the other half of it into small containers. He filled the containers to the brim. Charlie used 24 more small containers than big containers.

(a) How many big containers did Charlie use?

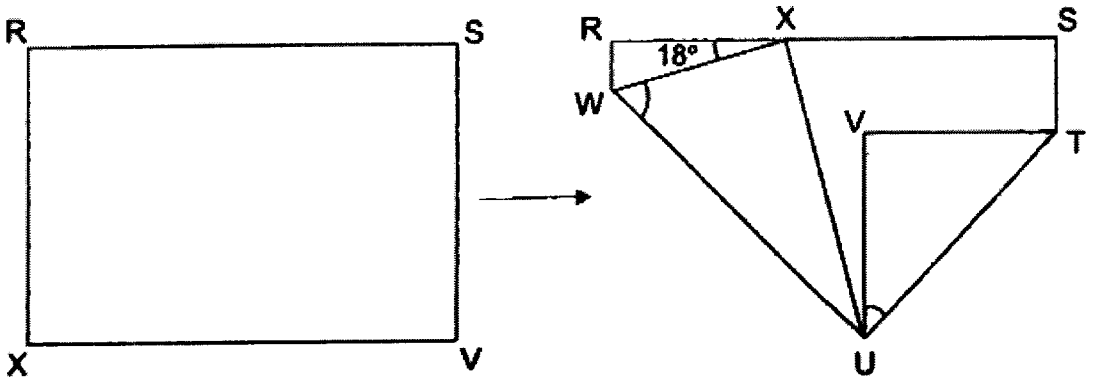
Ans: (a) _____ [2]

(b) How much pancake mixture was there?

Ans: (b) _____ [2]

Do not write in this space

14 A rectangular piece of paper RSVX is folded at two of its corners as shown.
VT = VU and ∠RXW = 18°.



Before folding *After folding*

(a) Find ∠VUT.

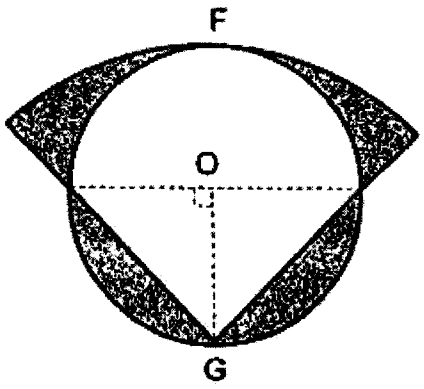
Ans: (a) _____ [1]

(b) Find ∠XWU.

Ans: (b) _____ [3]

Do not write in this space

15 The figure below is made up of a quadrant and a circle overlapping each other. The quadrant touches the circle at points F and G.
The circle, with centre O, has a diameter of 24 cm. Find the area of the shaded part .
($\pi = 3.14$)



Ans: _____ [5]

Do not write in this space

16 Ms Wong received $6120 from selling some bags and some dresses. She received $3240 more for the bags than the dresses. 4 times as many bags as dresses were sold. Each dress cost $15 more than each bag.

(a) How much did Ms Wong receive for the bags?

Ans: (a) _____ [2]

(b) How many dresses did Ms Wong sell?

Ans: (b) _____ [3]

Do not write in this space

17 Ali, Brandon, Carrie and Devi shared a sum of money equally at first.
Ali gave $\frac{2}{3}$ of his money to Brandon.

(a) What fraction of the sum of money did Ali have in the end?

Ans: (a) _____ [1]

(b) Brandon then gave $\frac{1}{5}$ of his money to Carrie.
Carrie then gave $\frac{3}{8}$ of her money and an additional $55 to Devi.
Devi had $595 in the end. How much was the sum of money they shared?

Ans: (b) _____ [4]

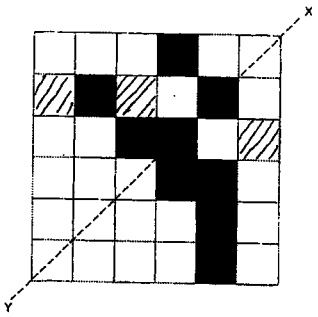
END OF PAPER
CHECK YOUR WORK CAREFULLY !

SCHOOL : AI TONG PRIMARY SCHOOL
LEVEL : PRIMARY 6
SUBJECT : MATHEMATICS
TERM : 2023 PRELIM

PAPER 1 (BOOKLET A)

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

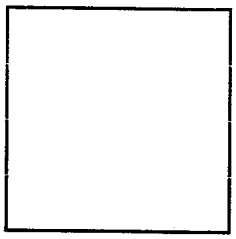
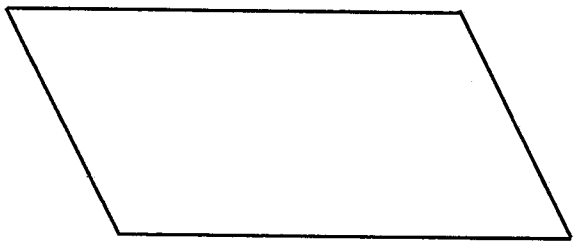
PAPER 1 (BOOKLET B)

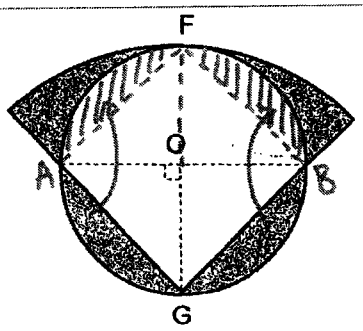
Q16	31.18
Q17	205
Q18	63°
Q19	36cm²
Q20	
Q21	250g - 100g = 150g 150g ÷ 50g = 3 Amount paid = \$5 + 3(\$2) = **\$11**
Q22	∠AEB = 70° ∠ABE = 180° - 70° - 70° = 40° ∠CBE = 90° - 40° = 50° ∠BCE = (180° - 50°) ÷ 2 = **65°**
Q23	Percentage present = 100% - 30% = 70% Total pupils in group = 60 0.7 x 60 = 42 ∴**Thursday**

Q24	5 + 4(8) +18 - 2(8) = 5 + 32 + 18 - 16 = **39**
Q25	Volume = 12 x 4 x 4 = **192** cm^2
Q26	Total stickers bought = 24n Stickers left after giving friends = 24n - 25 Stickers in each box = $\frac{\mathbf{(24n - 25)}}{\mathbf{7}}$
Q27	12u - 10u = 2u \$40 ÷ 2 = \$20 \$20 x 12 = **\$240**
Q28	$\frac{\text{Printers sold by B}}{\text{Total sold}} = \frac{26u}{(24u + 26u + 18u + 30u)} = \frac{26}{98} = \mathbf{\frac{13}{49}}$
Q29	Largest possible no. of women = least no. of men 1 group = 4 people (W M M M) No. of groups = 115 ÷ 4 = 28R3 → last group has 1 less M (W M M) Largest possible no. of women = 28 + 1 = **29**
Q30	Total at first = 5u Total left = 2u 5u = 2u + 21(5) 3u = 105 1u = **35**

PAPER 2

Q1a	9203
Q1b	3029
Q2	2u = 42 1u = 21 7u = **147**
Q3	∠a + ∠c = 90° ∠b = 90° ÷ 2 = 45° ∠a + ∠b + ∠c = 90° + 45° = **135°**
Q4	120 x $\frac{7}{20}$ = 42 15 + 27 = 42 Min. grade = **B**
Q5	1728 x $\frac{5}{6}$ = 1440 cm^2 1440 cm^2 ÷ 2 = **720 cm^2**
Q6a	100% - 15% - 30% - 25% = **30%**

Q6b	Percentage of students in Brownies = $\frac{2}{5}$ x 30% = 12% No. of students in Brownies = $\frac{12}{100}$ x 300 = **36**
Q7	Total volume = 24 x 20 x 14 + 85 x 14 x (42 - 24) = 28140 cm^3 = 28.14 ℓ Time needed = 28.14 ÷ 2.01 = **14 min**
Q8a	
Q8b	
Q9	No. of soccer balls added = 40% x 45 = 18 No. of ping pong balls added = 25% x 68 = 17 No. of basketballs added = 80 - 18 - 17 = 45 Percentage increase = $\frac{45}{30}$ x 100% = **150%**
Q10	Time taken for Farah = 20 ÷ 30 = 40 min Time taken for Jamil = 40 + 15 = 55 min = $\frac{11}{12}$ h Distance = 42 x $\frac{11}{12}$ = **38.5km**
Q11	∠TUV = 180° - 122° = 58° ∠VUX = 78° ∠y = 360° - 78° - 58° = **224°**
Q12	2120 - 536 = 1584 $\frac{3}{4}$ of girls = 9u Total girls = 12u 12u + 4u = 1584 1u = 1584 ÷ 16 = 99 5u = 99 x 5 = **495**

Q13a	375 - 75 = 300 24 x 75 = 1800 1800 ÷ 300 = **6**
Q13b	6 x 375 x 2 = **4500 ml**
Q14a	(180° - 90°) ÷ 2 = **45°**
Q14b	∠RWX = 180° - 90° - 18° = 72° ∠XWU = (180° - 72°) ÷ 2 = **54°**
Q15	Shaded area = big quadrant - unshaded AFBG Area of big quadrant $= \frac{1}{4}\pi r^2 = \frac{1}{4} \times 3.14 \times (24)^2$ = 452.16 cm² Area of AFBG = 24 x 12 = 288 cm² Area of shaded part = 452.16 cm² - 288 cm² = **164.16 cm²** 
Q16a	$6120 - $3240 = $2880 $2880 ÷ 2 = $1440 $1440 + $3240 = **$4680**
Q16b	$4680 ÷ 4 = $ 1170 $1440 - $1170 = $270 $270 ÷ 15 = **18**
Q17a	Total units = 4 x 3 = 12u Fraction Ali had in the end = **$\frac{1}{12}$**
Q17b	<u>Before</u> A : B : C : D = 1u : 5u : 3u : 3u <u>After Brandon gave Carrie</u> A : B : C : D = 1u : 4u : 4u : 3u = 2u : 8u : 8u : 6u <u>After Carrie gave Devi</u> A : B : C : D = 2u : 8u : 5u - $55 : 9u + $55 9u + $55 = $595 9u = $540 1u = $60 24u = $60 x 24 = **$1440**