603 / SA1 / 8

RED SWASTIKA SCHOOL

2022 MID-YEAR EXAMINATION

MATHEMATICS
PAPER 1

Name : _____ ( )

Class : Primary 6 / _____

Date : 11 May 2022

BOOKLET A

15 Questions
20 Marks
Duration of Paper 1 (Booklets A & B): 1 hour

Note:

1. Do not open this Booklet until you are told to do so.
2. Read carefully the instructions given at the beginning of each part of the Booklet.
3. Do not waste time. If a question is difficult for you, go on to the next one.
4. Check your answers thoroughly and make sure you attempt every question.
5. In this booklet, you should have the following:
   (a) Page 1 to Page 5
   (b) Questions 1 to 15
6. You are not allowed to use a calculator.

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 Find the value of $\frac{3}{5} \div 12$. Express your answer in its simplest form.

(1) $\frac{1}{20}$

(2) $\frac{3}{60}$

(3) $7\frac{1}{5}$

(4) 20

2 $\frac{2}{9} \div \frac{1}{2} = \square$

What is the missing number in the box?

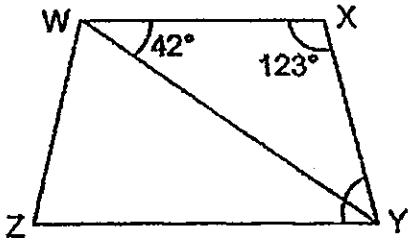
(1) $\frac{1}{9}$

(2) $\frac{4}{9}$

(3) $\frac{9}{4}$

(4) 9

3 In the figure below, WXYZ is a trapezium. WX // YZ. Find $\angle$ XYZ.



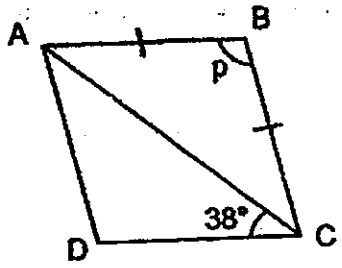
(1) 15°

(2) 42°

(3) 57°

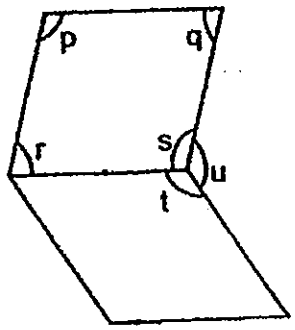
(4) 81°

4 In the figure below, ABCD is a rhombus. Find $\angle p$.



(1) 71°
(2) 76°
(3) 104°
(4) 142°

5 The figure below shows two rhombuses. Which pair of angles add up to 180°?



(1) $\angle q$ and $\angle r$
(2) $\angle p$ and $\angle r$
(3) $\angle t$ and $\angle s$
(4) $\angle t$ and $\angle u$

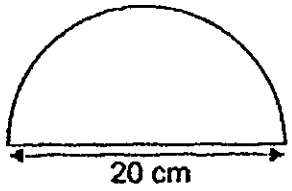
6 In a farm, the ratio of the number of cows to sheep to ducks is 2 : 3 : 7. The number of sheep is $\square$ of the total number of animals. What is the missing fraction in the box?

(1) $\frac{1}{4}$
(2) $\frac{1}{6}$
(3) $\frac{3}{7}$
(4) $\frac{7}{12}$

7 There are 160 beads in a box. 60% of the beads are red and the rest are green. How many green beads are there in the box?

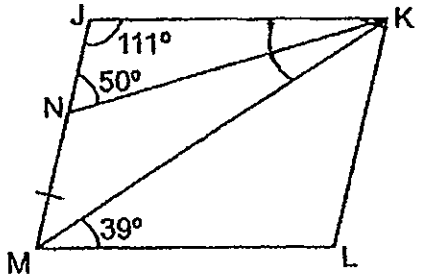
(1) 64
(2) 66
(3) 80
(4) 96

8 The semicircle below has a diameter of 20 cm.
Find the area of the semicircle. (Take $\pi = 3.14$)



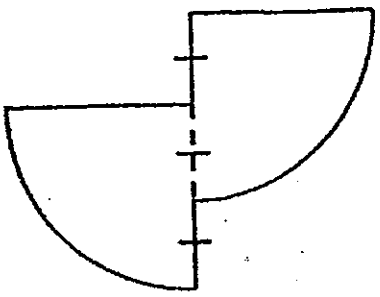
(1) 31.4 cm^2
(2) 62.8 cm^2
(3) 157 cm^2
(4) 314 cm^2

9 In the figure below, JKLM is a parallelogram. $\angle NJK = 111°$, $\angle JNK = 50°$ and $\angle KML = 39°$, find $\angle NKM$.



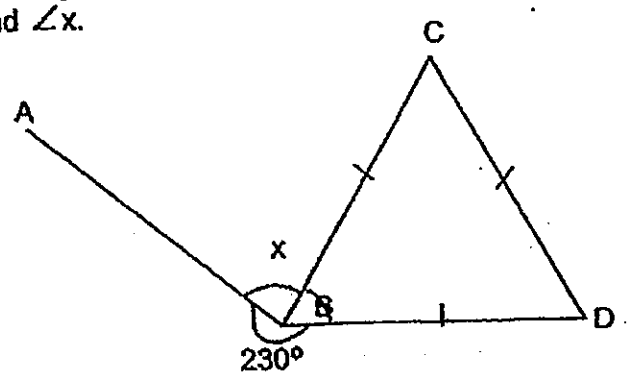
(1) 19°
(2) 20°
(3) 30°
(4) 39°

10 The figure below is formed by joining two identical quarter circles of radius 7 cm. Find the perimeter of the figure. (Take $\pi = \frac{22}{7}$)



(1) 22 cm
(2) 32 cm
(3) 36 cm
(4) 43 cm

11 In the figure below, AB is a straight line. BCD is an equilateral triangle. Find $\angle x$.



(1) 50°
(2) 70°
(3) 130°
(4) 290°

12 There is an equal number of members in the Art Club and Robotics Club. The ratio of the number of boys to the number of girls in the Art Club is 2 : 13. The ratio of the number of boys to the number of girls in the Robotics Club is 2 : 1. What is the ratio of the number of boys in the Art Club to the number of boys in the Robotics Club?

(1) 2 : 2
(2) 2 : 10
(3) 4 : 14
(4) 13 : 5

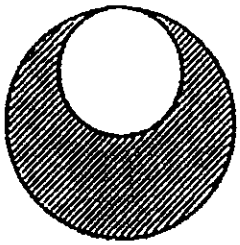
13 The sum of 4 numbers is 1200. One of the numbers is 180. What is the average of the other 3 numbers?

(1) 255
(2) 340
(3) 345
(4) 460

14 A bag costs \$40. A 20% discount is given to all shoppers. Members are given a further discount of \$8. What is the total percentage discount given to a member who bought the bag?

(1) 25%
(2) 40%
(3) 50%
(4) 60%

15 The figure below shows two circles. The radius of the big circle is 14 cm and it is twice as long as the radius of the small circle. What is the area of the shaded part? (Take $\pi = \frac{22}{7}$)



(1) 132 cm^2
(2) 154 cm^2
(3) 462 cm^2
(4) 616 cm^2

RED SWASTIKA SCHOOL

2022 MID-YEAR EXAMINATION

MATHEMATICS
PAPER 1

Name : _____( )

Class : Primary 6 / _____

Date : 11 May 2022

BOOKLET B

15 Questions
25 Marks

In this booklet, you should have the following:
(a) Page 6 to Page 12
(b) Questions 16 to 30

MARKS

	OBTAINED	POSSIBLE
BOOKLET A		20
BOOKLET B		25
TOTAL		45

Parent's Signature : _____

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)

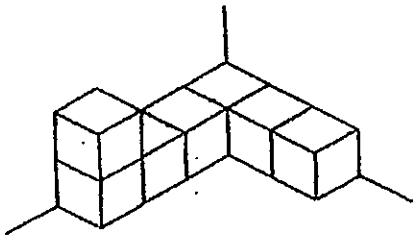
16 Express $\frac{3}{25}$ as a decimal.

Ans: _____

17 A cinema sold 15 887 movie tickets last week. Express this number to the nearest thousand.

Ans: _____

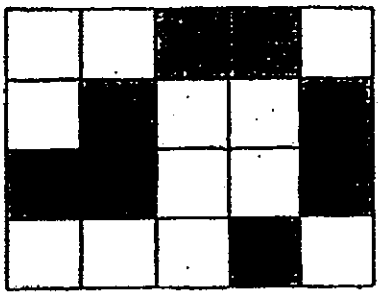
18 The solid below is made up of 1-cm^3 cubes. What is the volume of the solid below?



Ans: _____ cm^3

3

19 The figure below is made up of squares. Shade two more squares so that the figure has only one line of symmetry.



20 Abby packed $\frac{1}{4}$ kg of rice into bags each weighing $\frac{1}{20}$ kg. How many bags of rice did Abby pack?

Ans:_____

2

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)**

21 Mandy cut $\frac{5}{8}$ of a cake equally into 3 slices. What fraction of the whole cake was each slice?

Ans: _____

22 Mrs Tan bought a bottle of oil. She used an equal amount of oil each day for cooking. At the end of the 12th day, $\frac{2}{3}$ of the bottle of oil was used. What fraction of the bottle of oil did she use each day from Day 1 to Day 12?

Ans: _____

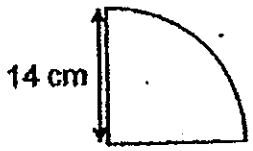
4

23 The price of a bottle of honey sold in a supermarket on Friday was $12. On Saturday, the price of the bottle of honey increased to $15. What was the percentage increase in the price of the bottle of honey?

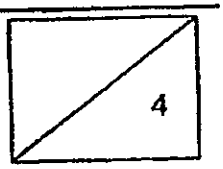
Ans: _____ %

---

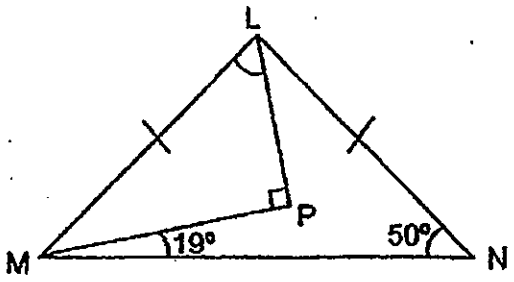
24 Find the perimeter of the quarter circle shown below. (Take $\pi = \frac{22}{7}$)



Ans: _____ cm



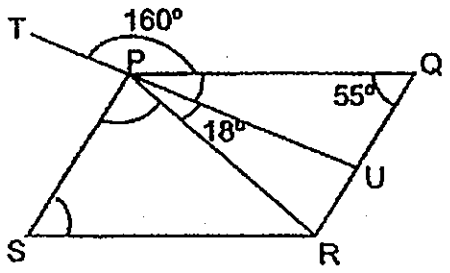
25 The figure below is made up of two triangles. LM = LN, ∠LNM = 50° and ∠PMN = 19°. Find ∠MLP.



Ans: _____ °

---

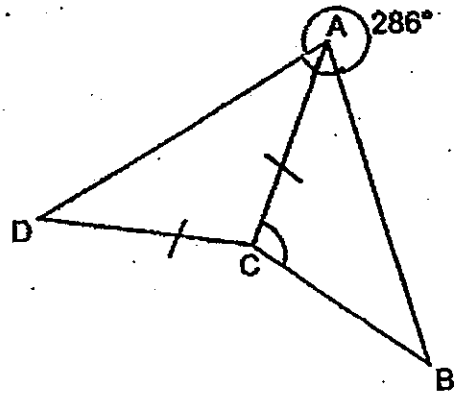
26 In the figure below, PQRS is a parallelogram. TU is a straight line. ∠PQU = 55°, ∠TPQ = 160° and ∠RPU = 18°. Find ∠SPR.



Ans: _____ °

4

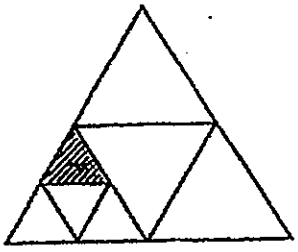
27 In the figure below, ABC and ACD are identical isosceles triangles. AC = CD = CB and ∠BAD = 286°. Find ∠ACB.



Ans: _____°

---

28 The figure below is made up of equilateral triangles. The shaded equilateral triangle touches each of the other two equilateral triangles. What fraction of the figure is shaded?



Ans: _____

4

29 A repeated pattern is formed by using the letters X, Y and Z. The first 10 letters are shown below. There is a total of 24 letters in the pattern. What percentage of the letters in the whole pattern is letter X?

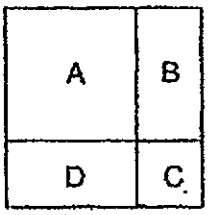
X	X	Y	Z	X	X	Y	Z	X	X.....

1st 2nd 3rd 10th

Ans: _____ %

---

30 The figure shows a square divided into two smaller squares A and C and two rectangles B and D. The ratio of the area of C to the whole figure is 1 : 9. The dimensions of the squares and rectangles are whole numbers.



Each of the statements below is either true, false or not possible to tell from the information given. For each statement, put a tick (✓) to indicate your answer.

Statement	True	False	Not possible to tell
The areas of B and D are the same.			
The area of the figure is 900 cm².			

END OF PAPER 1

4

RED SWASTIKA SCHOOL

2022 MID-YEAR EXAMINATION

MATHEMATICS
PAPER 2

Name : _____ ( )

Class : Primary 6 / _____

Date : 11 May 2022

17 Questions
55 Marks
Duration of Paper 2: 1 hour 30 minutes

Note:
1. Do not open this Booklet until you are told to do so.
2. Read carefully the instructions given at the beginning of each part of the Booklet.
3. Do not waste time. If a question is difficult for you, go on to the next one.
4. Check your answers thoroughly and make sure you attempt every question.
5. In this paper, you should have the following:
   (a) Page 1 to Page 15
   (b) Questions 1 to 17
6. You are allowed to use a calculator.

MARKS

	OBTAINED	POSSIBLE
PAPER 1		45
PAPER 2		55
TOTAL		100

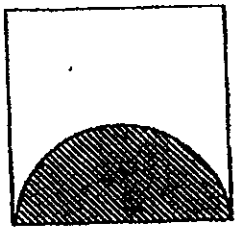
Parent's Signature : _____

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)

1 Mr Souza gave a sum of money to his three children. His first child received $\frac{1}{4}$ of the total amount of money. The amount of money received by his second and third child was in the ratio 7 : 5. His third child received $1150. What was the total sum of money that Mr Souza distributed?

Ans: $ _____

2 The figure below is made up of a square and a semicircle. The perimeter of the square is 40 cm. Find the perimeter of the shaded part. (Take $\pi = 3.14$)



Ans: _____ cm

4

3 If Shane had his pocket money increased by 50% and Ruth had her pocket money decreased by 25%, both of them would have the same amount of pocket money. What percentage of their total amount of pocket money did Shane have? Correct your answer to one decimal place.

Ans: _____ %

---

4 Becky bought some pineapple juice and orange juice to make fruit punch. She used an equal amount of the two juices to make the fruit punch. In the end, she had $\frac{4}{5}$ of the pineapple juice and $\frac{1}{3}$ of the orange juice left. What fraction of the total amount of juice bought was used?

Ans: _____

4

5 The sum of three different 3-digit numbers is 1000. Of these three numbers, find the largest possible number.

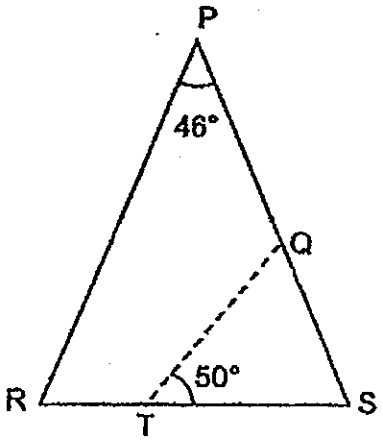
Ans: _____

2

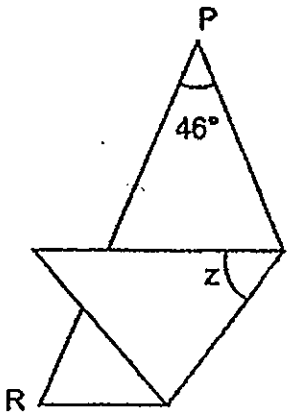
For Questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part-question. (45 marks)

---

6 Jamie had a triangular piece of paper PRS where PR = PS, $\angle RPS = 46°$ and $\angle QTS = 50°$. Find $\angle z$.

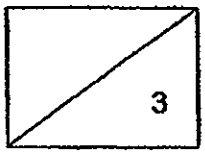


Before folding

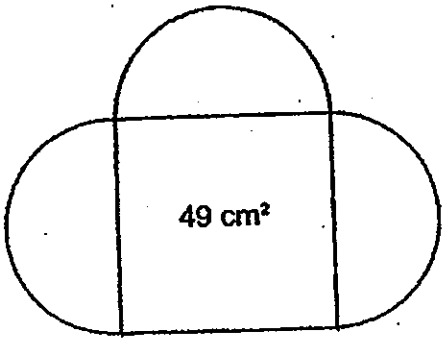


After folding

Ans: _____ [3]



7 The figure below is formed by three identical semicircles and a square of area 49 cm². What is the area of the figure? (Take $\pi = \frac{22}{7}$)

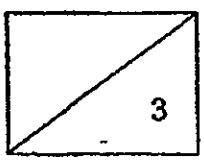


Ans: _____ [3]

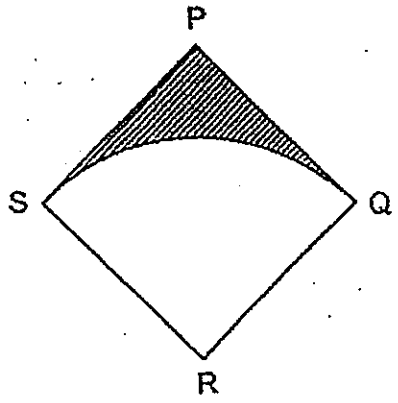
3

8 The ratio of Pete's savings to Lucas' savings was 13 : 4. After their parents gave them $84 each, the ratio of Pete's savings to Lucas' savings became 5 : 2. How much was Lucas' savings at first?

Ans: _____ [3]



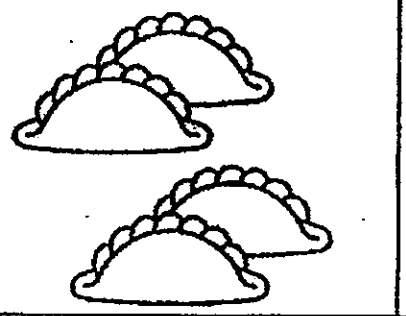
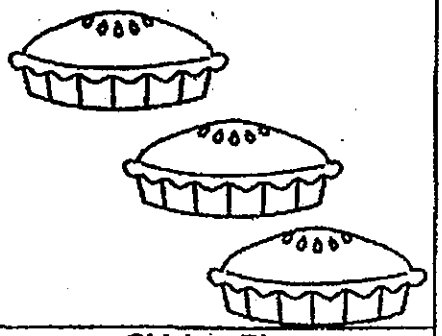
9 The figure below is formed by a quadrant SQR and a square PQRS. The area of square PQRS is 225 cm^2. Find the perimeter of the shaded part. (Take $\pi = 3.14$)



Ans: _____ [3]

3

10 The prices of tuna puffs and chicken pies sold in a shop are shown below.

	
Tuna Puffs 4 for $10.60	Chicken Pies 3 for $12.50

(a) If Mdm Wong wants to buy an equal number of tuna puffs and chicken pies, what is the least number of tuna puffs she needs to buy?

Ans: (a) _____ [1]

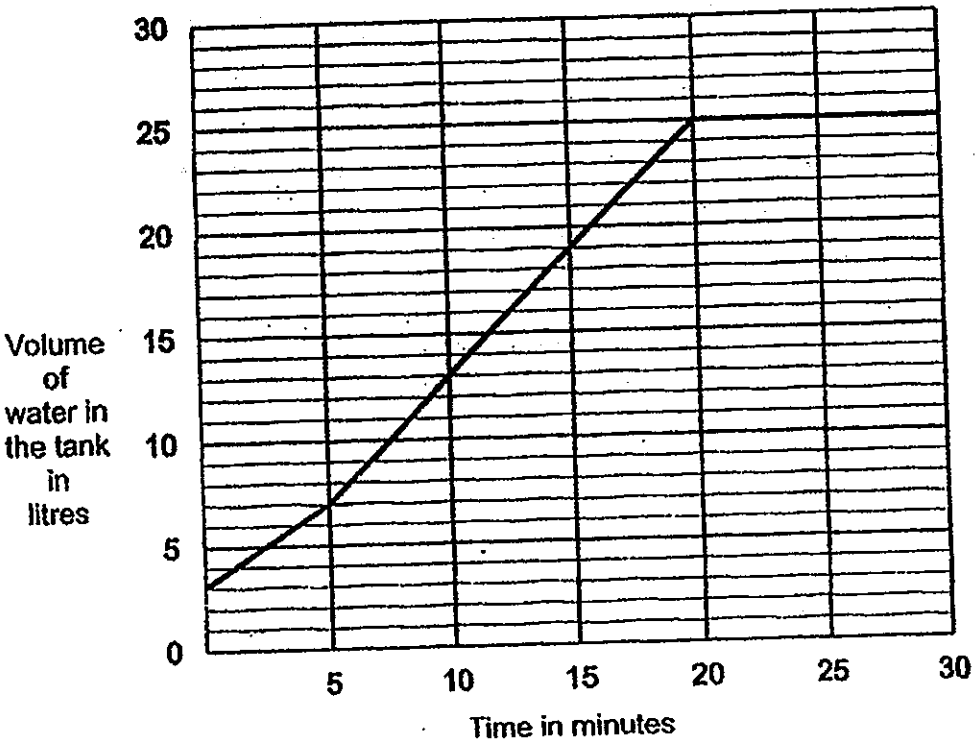
(b) Mdm Wong bought an equal number of tuna puffs and chicken pies. She spent $72.80 more on the chicken pies than the tuna puffs. How many chicken pies did she buy altogether?

Ans (b) _____ [3]

4

11 A tank contained some water. Kim filled the tank with more water using two taps, A and B. She turned on Tap A and after 5 minutes, she also turned on Tap B. She turned off both taps at the same time when the tank was completely filled without overflowing.

The graph below shows the volume of water in the tank over 30 minutes.



(a) How much water flowed into the tank from Tap A for the first 5 minutes?

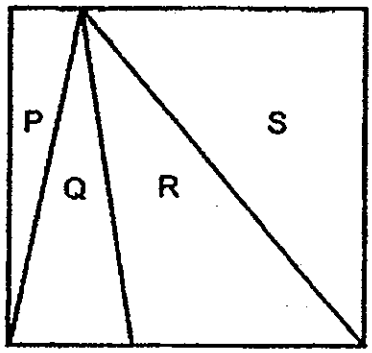
Ans: (a)_____ [1]

(b) In one minute, what is the volume of water that flowed from Tap B?

Ans: (b)_____ [2]

3

12 A rectangle is made up of four triangles, P, Q, R and S. The area of P is 10% of the area of the rectangle while the area of Q is 15% of the area of the rectangle.

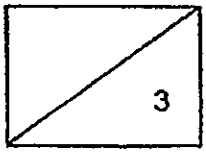


(a) Given that the area of P and R is 67.5 cm², find the area of the rectangle.

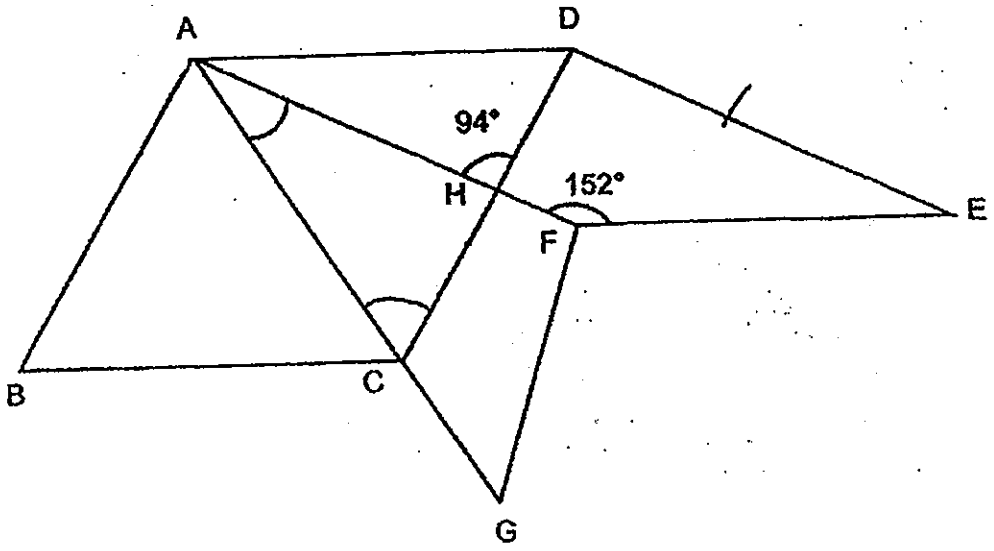
Ans: (a)_____ [2]

(b) What percentage of the area of S is the area of Q?

Ans: (b)_____[1]



13 In the figure below, not drawn to scale, ABCD and ADEF are rhombuses. ACG is a straight line. $\angle AHD = 94°$ and $\angle HFE = 152°$



(a) Without adding any additional lines, name a trapezium in the figure above.

Ans: (a) _____ [1]

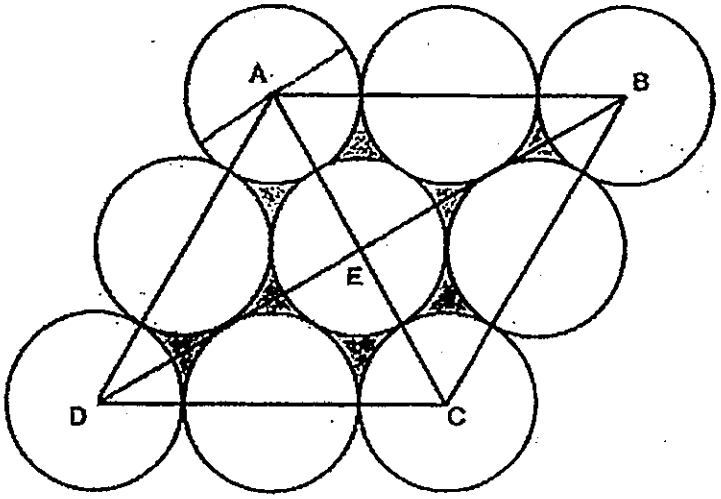
(b) Find $\angle$ FAC.

Ans: (b) _____ [4]

5

14 The figure below is made up of 9 identical circles and 4 identical right-angled triangles.

A, B, C, D, and E are the centres of 5 circles. The diameter of each circle is 10 cm and BE is 17.3 cm. Find the area of the shaded parts. (Take $\pi = 3.14$)



Ans: _____ [5]

5

15 Gigi and Han earned a total of $1515 for painting a piece of wall. Han earned $705 less than Gigi.

(a) How much did Han earn for painting the wall?

Ans: (a)_____ [1]

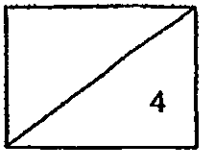
(b) Han took half as many days as Gigi to paint and earned $10 less per day compared to Gigi. How many days did Gigi take to complete painting the wall ?

Ans: (b)_____ [4]

5

16 Sulin wanted to make some necklaces using a mixture of red beads and blue beads. She spent $\frac{1}{4}$ of her money on 32 blue beads and 12 red beads. The cost of each red bead is twice the cost of each blue bead. Sulin bought some more red beads with $\frac{1}{4}$ of her remaining money. How many red beads did she buy altogether in the end?

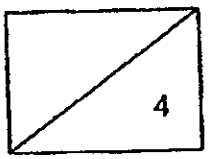
Ans: _____ [4]



17 Billy bought $\frac{4}{5}$ as many pens as rulers and $\frac{2}{3}$ as many rulers as erasers. He paid a total of \$130 for all the stationery. The ratio of the amount of money he spent on the pens to the amount he spent on the rulers was 2 : 3. The ratio of the amount of money he spent on the pens to the amount of money he spent on the erasers was 1 : 4. Each ruler cost \$0.50. Find the total number of stationery Billy bought.

Ans: _____ [4]

END OF PAPER 2



SCHOOL : RED SWASTIKA PRIMARY SCHOOL
LEVEL : PRIMARY 6
SUBJECT : MATHEMATICS
TERM : 2022 SA1

PAPER 1 BOOKLET A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	2	3	3	2	1	1	3	2	4

Q 11	Q12	Q13	Q14	Q15
2	2	2	2	3

PAPER 1 BOOKLET B

Q16)

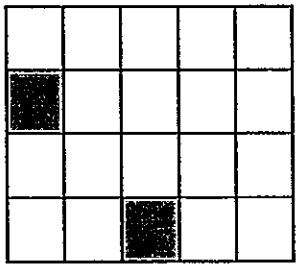
$$\frac{3}{25} \overset{\times 4}{=} \frac{12}{100}$$

$$= 0.12$$

Q17) 16000

Q18) $7cm^3$

Q19)



Q20)

$$\frac{1}{4} \div \frac{1}{20} = \frac{1}{4} \times \frac{20}{1}$$

$$= 5$$

Q21)

$$\frac{5}{8} \div \frac{3}{1} = \frac{5}{8} \times \frac{1}{3}$$

$$= \frac{5}{24}$$

Q22)	$\frac{2}{3} \div \frac{12}{1} = \frac{2}{3} \text{x} \frac{1}{12}$ $= \frac{1}{18}$
Q23)	$15 - 12 = 3$ $\frac{3}{12} \text{x } 100\% = 25\%$
Q24)	$14 \text{x } 2 = 28$ $= \frac{22}{7} \text{ x } \frac{28}{1} \text{ x } \frac{1}{4}$ $= 22$ $22 + 14 + 14 = 50 \text{ cm}$
Q25)	$50° - 19 = 31°$ $< MLP = 180° - 31° - 90°$ $= 59°$
Q26)	$180° - 160° = 20°$ $< SPR = 180° 20° - 18° - 55°$ $= 87°$
Q27)	$< a = 360° - 286°$ $= 74°$ $< ACB = 180° - 74°$ $= 106°$
Q28)	$4 \text{x } 4 = 16$ Ans: $\frac{1}{16}$
Q29)	$24 \div 4 = 6$ $4 - 2 = 2$ $2 \text{x } 6 = 12$ $\frac{12}{24} \text{ x } 100\ \% = 50\ \%$

Q30)	<table><tr><td>√</td><td></td><td></td></tr><tr><td></td><td></td><td>√</td></tr></table>

PAPER 2

Q1)	$5u = 1150$ $\quad$ $4p - 1p = 3p$ $7u + 5u = 12u$ $\quad$ $2760 \longrightarrow 3p$ $12u = \frac{1150}{5} \times 12$ $\quad$ $4p = \frac{2760}{3} \times 4$ $= 2760$ $\quad$ $= \$3680$
Q2)	$40 \div 4 = 10$ $\frac{1}{2} \times 3.14 \times 10 = 15.7$ $15.7 + 10 = 25.7$ cm
Q3)	$\approx 33.3\%$
Q4)	$10u + 3u = 13u$ $2u + 2u = 4u$ $Ans: \frac{4}{13}$
Q5)	$1000 - 100 - 101 = 799$
Q6)	$\frac{180° - 46°}{2} = 67°$ $180° - 67° - 50° = 63°$
Q7)	$\sqrt{49} = 7$ $7 \div 2 = 3.5$ $\frac{22}{7} \times 3.5 \times 3.5 \times 1\frac{1}{2} = 57.75$ $49 + 57.75 = 106.75\ cm^2$

Q8)	$13u - 4u = 9u$ $5u - 2u = 3u$ $6u - 4u = 2u$ $2u = 84$ $4u = 84 \times 2$ $= \$168$
Q9)	$\sqrt{225} = 15$ $15 \times 2 = 30$ $30 \times 3.14 \times \frac{1}{4} = 23.55$ $P = 23.55 + 30 = 53.55cm$
Q10)	(a) $4 \times 3 = 12$ (b) $12T = 10.6 \times 3$ $= 31.8$ $12C = 12.5 \times 4$ $= 50$ $50 - 31.8 = 18.2$ $72.8 \div 18.2 = 4$ $4 \times 12 = 48$
Q11)	(a) $7 - 3 = 4litres$ (b) $13 - 7 = 6$ $6 - 4 = 2$ $10 - 5 = 5$ $2 \div 5 = 0.4litres$
Q12)	(a) $50u - 15u = 35u$ $35u + 10u = 45u$ $45u = 67.5cm^2$ $100u = \frac{67.5}{45} \times 100$ $= 150cm^2$

	(b) $100u \div 2 = 50u$ $50u - 10u = 40u$ $\frac{15}{40} \times 100\% = 37.5\%$
Q13)	(a) AHCB (b) $< DAE = 180° - 152°$ $= 28°$ $< ADC = 180° - 94° - 28°$ $= 58°$ $< ACD = \frac{180°-58°}{2}$ $= 61°$ $< FAC = 61° - 28°$ $= 33°$
Q14)	R $\longrightarrow 10 \div 2 = 5$ $\triangle = \frac{1}{2} \times \frac{17.3}{1} \times \frac{10}{1}$ $= 86.5$ $\bigcirc = 5 \times 3.14 \times 5$ $= 78.5$ shaded $= (86.5 - 78.5) \times 4$ $= 32cm^2$
Q15)	(a) $\frac{1515-705}{2} = \$405$ (b) $705 + 405 = 1110$ $1110 \div 2 = 555$ $555 - 405 = 150$ $150 \div 10 = 15$ $15 \times 2 = 30$

Q16)	$12 \times 2 = 24$ $24 + 32 = 56$ $4u = 56$ $3u = \frac{56}{4} \times 3$ $= 42$ $42 \div 2 = 21$ $21 + 12 = 33$
Q17)	$30 \div 0.5 = 60$ $8 + 10 + 15 = 33$ $60 \div 10 = 6$ $6 \times 33 = 198$

END