603 / SA1 / 4

NANYANG PRIMARY SCHOOL

MID-YEAR EXAMINATION 2022

PRIMARY 6

MATHEMATICS PAPER 1 (BOOKLET A)

Total Duration for Booklets A and B: 1 hour

Additional materials: Optical Answer Sheet (OAS)

INSTRUCTIONS TO PUPILS

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

Name: _____ ( )

Class: Primary 6 ( )

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)

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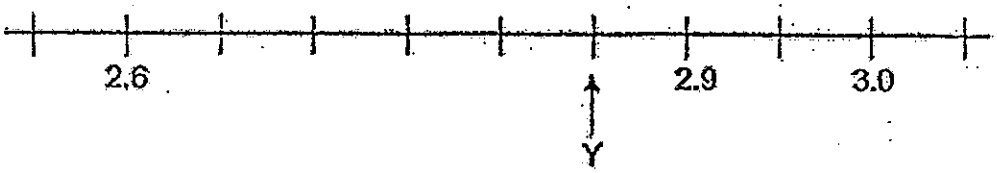
1 In the number line below, what is the value of Y?



(1) 2.85

(2) 2.8

(3) 2.75

(4) 2.7

2 Find the value of $\frac{5}{6} \div \frac{1}{4}$.

(1) $\frac{10}{3}$

(2) $\frac{5}{24}$

(3) $\frac{3}{10}$

(4) $\frac{24}{5}$

3 Which of the following is the same as 25% of 20%?

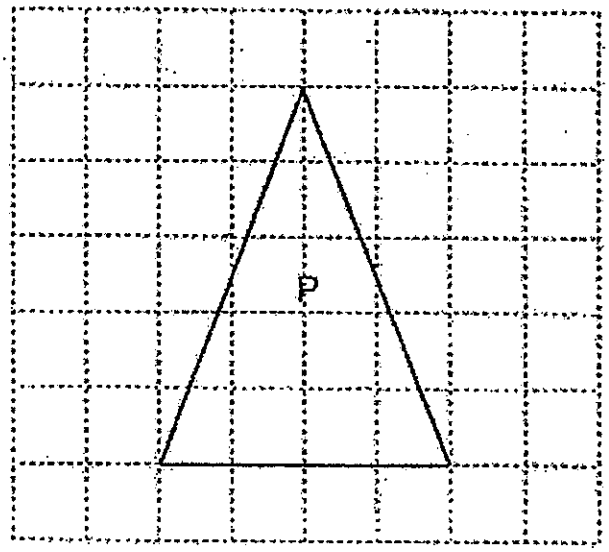
(1) $\frac{1}{4} \times \frac{1}{5}$

(2) $\frac{3}{4} \times \frac{1}{5}$

(3) $\frac{1}{4} \times \frac{4}{5}$

(4) $\frac{3}{4} \times \frac{4}{5}$

4 The square grid below shows Triangle P. What type of triangle is Triangle P?



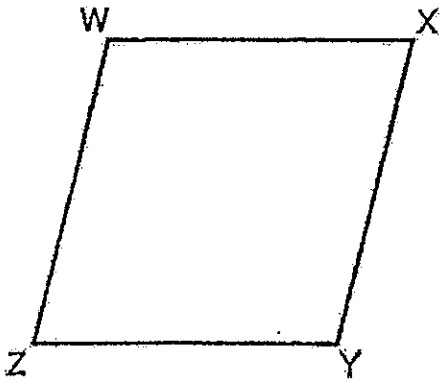
(1) Obtuse-angled triangle

(2) Right-angled triangle

(3) Equilateral triangle

(4) Isosceles triangle

5 In the figure below, WXYZ is a rhombus.



Which one of the following is false?

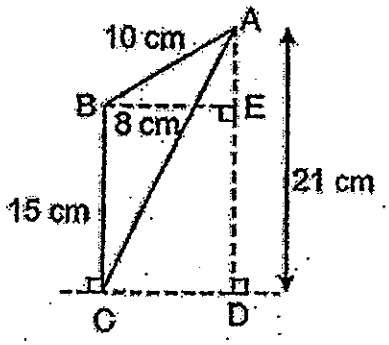
(1) WX // ZY

(2) $\angle XYZ = \angle XWZ$

(3) $\angle WZY = \angle ZWX$

(4) $\angle WZY + \angle XYZ = 180^\circ$

6 ABC is a triangle with AB = 10 cm and BC = 15 cm. BE = 8 cm and AD = 21 cm. Find the area of triangle ABC.



(1) 40 cm^2

(2) 60 cm^2

(3) 75 cm^2

(4) 84 cm^2

7 What is the area of a circle with diameter 60 cm?
(Take $\pi = 3.14$)

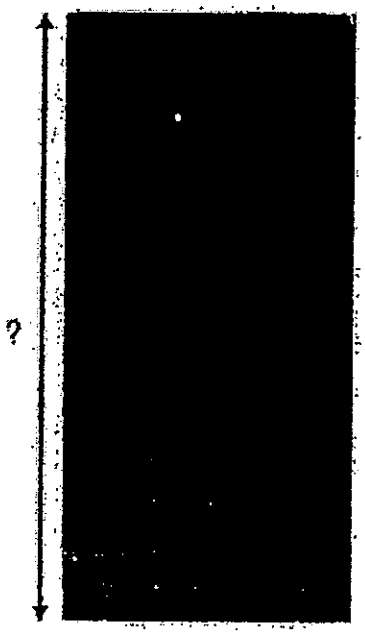
(1) 94.2 cm^2

(2) 188.4 cm^2

(3) 2826 cm^2

(4) 11304 cm^2

8 Which of the following is likely to be the length of an approved scientific calculator for PSLE?



(1) 0.018 m

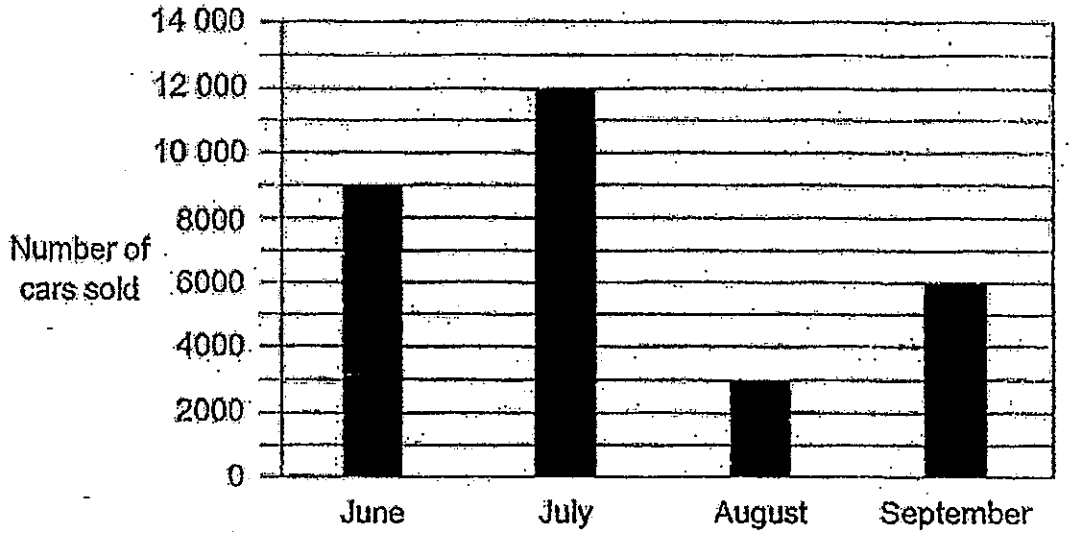
(2) 0.18 m

(3) 1.8 m

(4) 18 m

Use the information below to answer questions 9 and 10.

The bar graph below shows the number of cars sold from June to September.



9 In which month was the number of cars sold half as many as the number of cars sold in September?

(1) June

(2) July

(3) August

(4) September

10 Which one of the following statements is true?

(1) The number of cars sold in June was 8500.

(2) The number of cars sold in July is $\frac{3}{4}$ the number of cars sold in June.

(3) The increase in the number of cars sold from August to September was 9000.

(4) The total number of cars sold in June and August is the same as the number of cars sold in July.

11 Last month, the florist sold 800 roses. This month, she sold 1000 roses. What was the percentage increase in the number of roses sold?

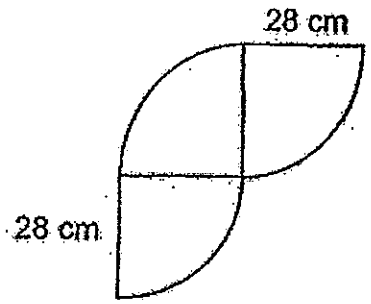
(1) 20%

(2) 25%

(3) 80%

(4) 200%

12 The figure below is made up of 3 identical quarter circles of radius 28 cm. Find its perimeter. (Take $\pi = \frac{22}{7}$)



(1) 132 cm

(2) 176 cm

(3) 188 cm

(4) 232 cm

13 A lollipop cost $0.70. There were 80 lollipops in a box. Janie bought 8 such boxes of lollipops for her class party. How much did she spend on the lollipops?

(1) $408

(2) $428

(3) $448

(4) $560

14 An empty rectangular tank was 40 cm long, 20 cm wide and 80 cm high. Mary poured some water into it and the water level reached a height of 30 cm. How many litres of water were there in the tank?

(1) 64 000

(2) 24 000

(3) 64

(4) 24

15 Ranjeet and Samy made some birthday cards over two days. On Saturday, Ranjeet made 29 more cards than Samy. On Sunday, Ranjeet made another 30 cards and Samy made another 25 cards. At the end of the two days, Ranjeet made $\frac{3}{5}$ of the total number of cards. What was the total number of cards Samy made over the two days?

(1) 34

(2) 68

(3) 102

(4) 170

NANYANG PRIMARY SCHOOL

MID-YEAR EXAMINATION 2022

PRIMARY 6

MATHEMATICS PAPER 1 (BOOKLET B)

Total Duration for Booklets A and B: 1 hour

INSTRUCTIONS TO PUPILS

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

Name: _____ ( )

Class: Primary 6 ( )

Booklet B	/ 25

Please sign and return the examination paper the next day. Any queries should be raised at the same time when returning paper.

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)

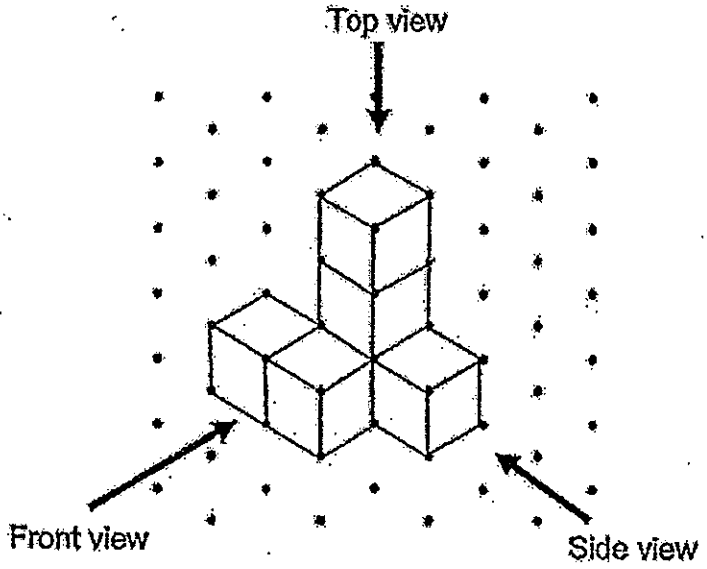
16 Express $3\frac{1}{4}$ as a decimal.

Ans: _____

17 The volume of a cube is 125 cm^3. Find the length of one edge of the cube.

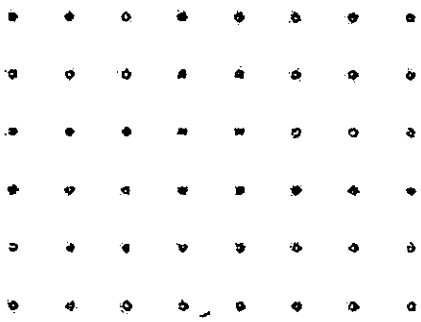
Ans: _____ cm

18 6 unit cubes were stacked and glued together to form the solid below.

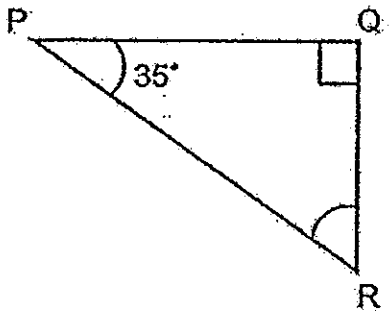


Draw the side view of the solid on the grid below.

Side View



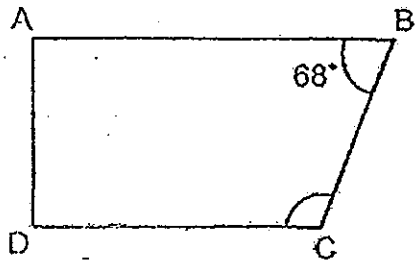
19 In the figure below, PQR is a right-angled triangle, $\angle QPR = 35°$. Find $\angle PRQ$.



Ans: _____

---

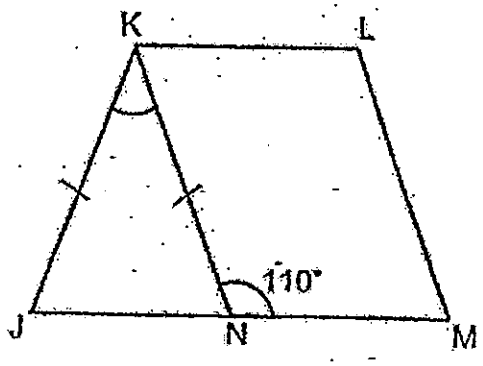
20 In the figure below, ABCD is a trapezium and AB is parallel to DC. $\angle ABC = 68°$. Find $\angle BCD$.



Ans: _____

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 In the figure below, JKN is an isosceles triangle and KLMN is a parallelogram. JNM is a straight line and JK = KN. $\angle KNM = 110°$. Find $\angle JKN$.

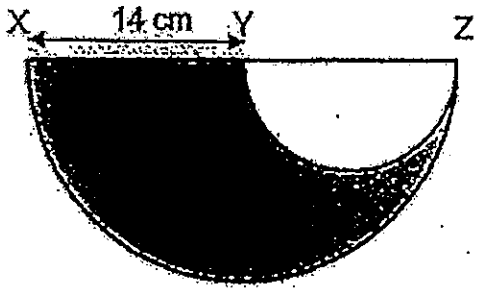


Ans: _____

22 Find the circumference of a circle of radius 5 cm. (Take $\pi = 3.14$)

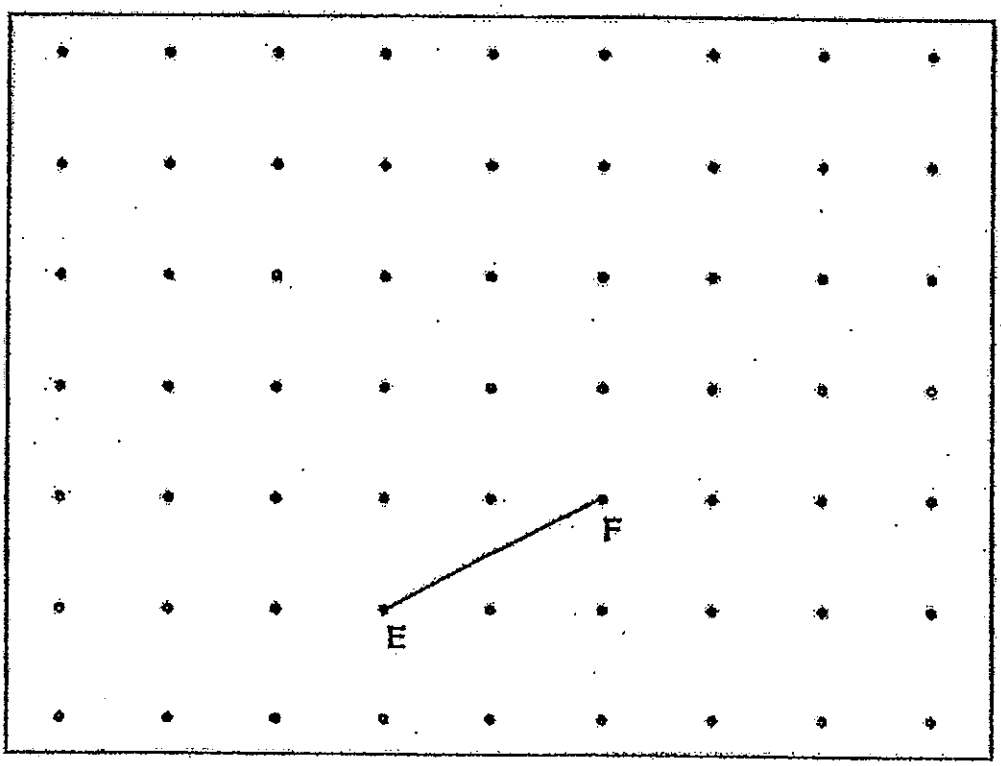
Ans: _____ cm

23 The figure below is made up of 2 semicircles. XY is half of XZ. XY = 14 cm. Find the area of the shaded part. (Take $\pi = \frac{22}{7}$)



Ans: _____ cm^2

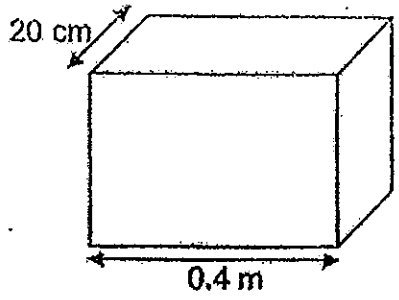
24 A straight line EF is drawn on a square grid inside a box.



G is one of the dots inside the box. Draw two lines FG and EG to complete triangle EFG with $\angle EFG = 90^\circ$ and EF = FG.

---

25 A cuboid is 0.4 m long and 20 cm wide. It has a volume of 20 000 cm^3. Find the height of the cuboid.



Ans: _____ cm

---

26 Two numbers add up to 364. One of the numbers is a 2-digit number and the other is a 3-digit number. What is the smallest possible difference between the two numbers?

Ans: _____

---

27 Use all the digits 7, 0, 4 and 5 to form

(a) the smallest multiple of 10

Ans: (a) _____

(b) the even number closest to 5000

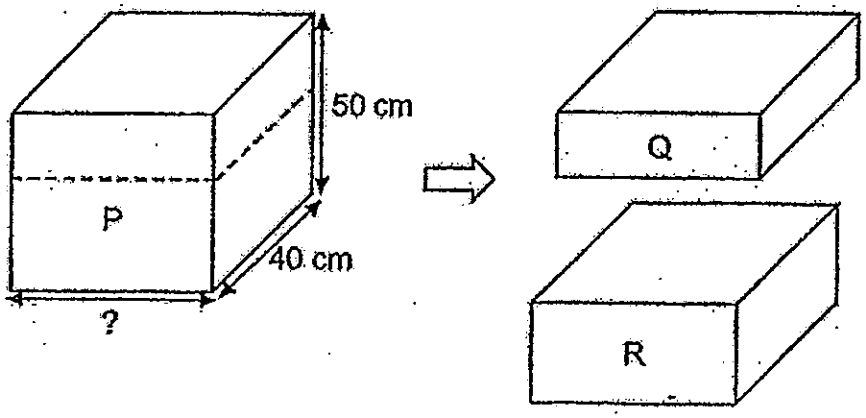
Ans: (b) _____

---

28 Shanice had a bottle of shampoo. She used an equal amount of shampoo each day. At the end of the 7th day, $\frac{4}{5}$ of the bottle was left. At the end of the 15th day, the amount of shampoo left was 280 ml. What was the amount of shampoo in the bottle at first?

Ans: _____ ml

29 A rectangular block P was cut along the dotted line into two smaller rectangular blocks Q and R as shown below. The volume of Q was $\frac{2}{3}$ the volume of R. The difference in volume between Q and R was 12 000 cm^3. Find the unknown edge of block P.



Ans: _____ cm

30 Devi collected $\frac{5}{12}$ as many foreign coins as Haminah. Haminah collected $\frac{6}{7}$ as many foreign coins as Liling. What was the ratio of the number of foreign coins Devi collected to the number of foreign coins Liling collected?

Ans: _____

End of Paper

NANYANG PRIMARY SCHOOL

MID-YEAR EXAMINATION 2022

PRIMARY 6

MATHEMATICS PAPER 2

Duration: 1 hour 30 minutes

INSTRUCTIONS TO PUPILS

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Write your answers in this booklet.
5. The use of an approved calculator is allowed.

Name: _____ ( )

Class: Primary 6 ( )

Parent's Signature: _____

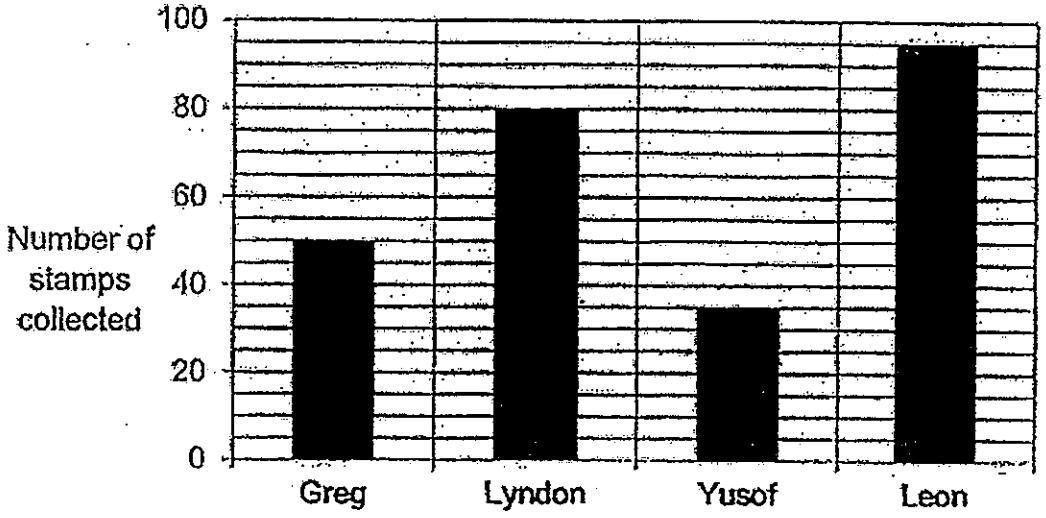
Booklet A	**/ 20**
Booklet B	**/ 25**
Paper 2	**/ 55**
Total	**/ 100**

Please sign and return the examination paper the next day. Any queries should be raised at the same time when returning paper.

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 The bar graph below shows the number of stamps collected by 4 boys.



Complete the table with the number of stamps collected by each boy.

Name	Number of stamps collected
Greg	50
Lyndon	
Yusof	35
Leon	

---

2 A bicycle wheel of diameter 80 cm made 3 complete turns. Find the distance covered. (Take $\pi = 3.14$)

Ans: _____ cm

---

3 Mr Tan bought a laptop. The price of the laptop before GST was $2500. He had to pay GST of 7% on the price of the laptop. What was the amount of GST he had to pay?

Ans: $_____

---

4 A machine started printing brochures at 8 a.m. on Wednesday at a rate of 800 brochures per hour. After every 5 hours of printing, it would be stopped for an hour to cool down. How many brochures were printed by 6 a.m. the next day?

Ans: _____

---

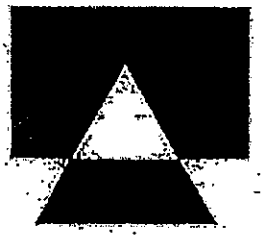
5 Kendrik bought 4 different storybooks. The first storybook cost $14 and the average cost of the remaining storybooks was $\frac{3}{7}$ of the cost of the first storybook. How much did he pay for all the storybooks?

Ans: $_____

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 The figure is made up of a rectangle and a triangle overlapping each other as shown. $\frac{1}{4}$ of the rectangle and $\frac{2}{5}$ of the triangle is unshaded. The area of the unshaded part of the figure is 57 cm^2.



(a) Find the area of the rectangle.

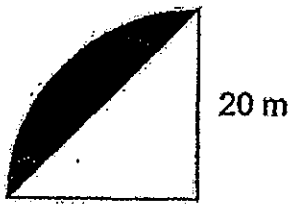
Ans: (a) _____ [1]

(b) What fraction of the figure is unshaded?

Ans: (b) _____ [2]

---

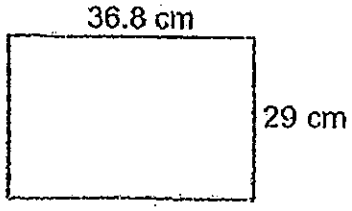
7 The figure below is made up of a quarter circle and a triangle. The radius of the quarter circle is 20 m. Find the area of the shaded part. (Take $\pi = 3.14$)



Ans: _____ [3]

---

8 Joe had a rectangular piece of paper, 36.8 cm by 29 cm, as shown below. He cut out as many squares as possible from the paper. The side of each square was 5 cm. At most, how many squares did Joe cut out?



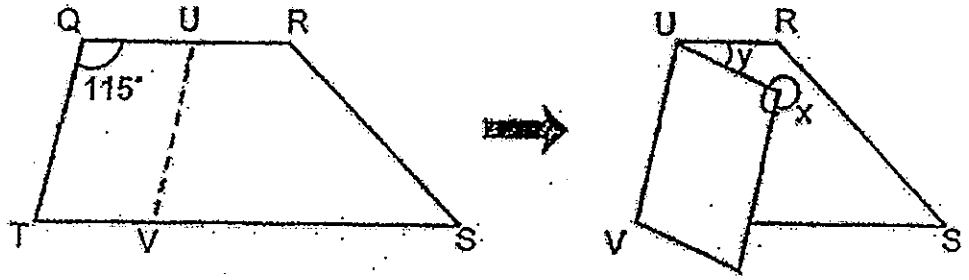
Ans: _____ [3]

---

9 Suzi formed a solid using some 2-cm, 3-cm and 5-cm cubes. She used a total of 18 cubes to form the solid. The total volume of the solid was 707 cm^3. How many 2-cm cubes did Suzi use?

Ans: _____ [3]

10 The following diagram shows a piece of paper QRST in the shape of a trapezium. $\angle TQR = 115°$. The paper is folded along line UV which is parallel to QT.



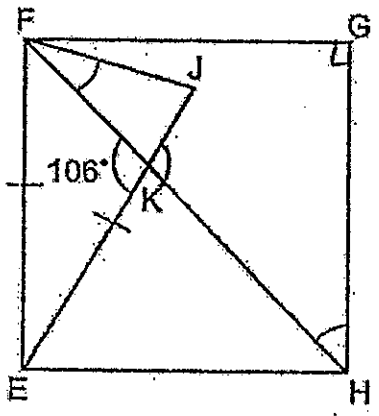
(a) Find $\angle x$.

Ans: (a) _____ [1]

(b) Find $\angle y$.

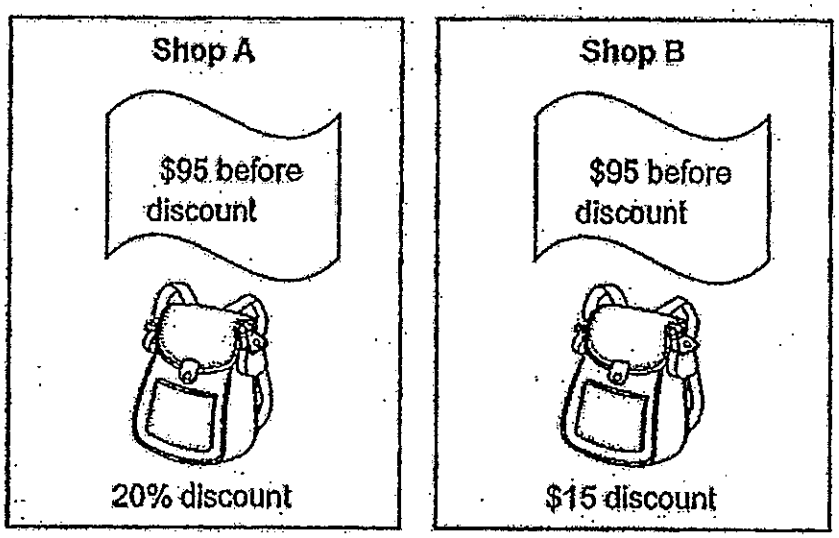
Ans: (b) _____ [2]

11 In the figure below, EFGH is a square. $\angle FKE = 106°$ and FE = EJ. FKH and JKE are straight lines. Find $\angle KFJ$.



Ans: _____ [4]

12 There are two different shops offering the following discounts for the same bag priced at $95 before discount.



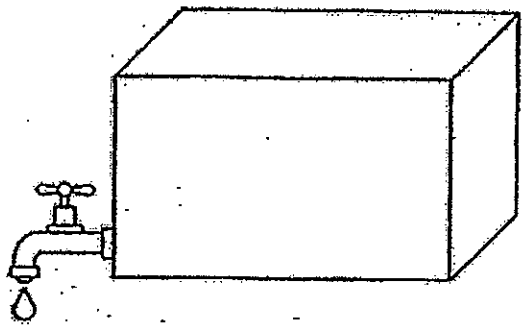
(a) Which shop sold the bag at a lower price? Show your working clearly.

Ans: (a) Shop _____ [2]

(b) Lisa had $100. She bought the bag from the shop that offered a lower price. How much money did she have left?

(b) _____ [2]

13 A rectangular tank with a base area of 3500 cm^2 and a height of 80 cm was $\frac{1}{4}$-filled with water at first. At 8 a.m., a tap was turned on and water was drained from the tank at the rate of 4 litres per minute. At 8.06 a.m., the tap was turned off.



(a) How much water was drained from the tank?

Ans: (a) _____ [1]

(b) After the tap was turned off, how much more water was needed to fill the tank completely?

Ans: (b) _____ [3]

14 A pencil and an eraser cost $1.05. The pencil and a ruler cost $0.85. Bernice paid $6.90 for 8 such pencils and 5 such erasers. Chandra paid $3.30 for some rulers.

(a) What was the cost of one such eraser?

Ans: (a) _____ [2]

(b) How many such rulers did Chandra buy?

Ans: (b) _____ [2]

15 Karl had clips of four different colours. $\frac{1}{8}$ of the clips were white and $\frac{2}{7}$ of the remaining clips were red. He had an equal number of blue clips and yellow clips. Karl had 35 blue clips.

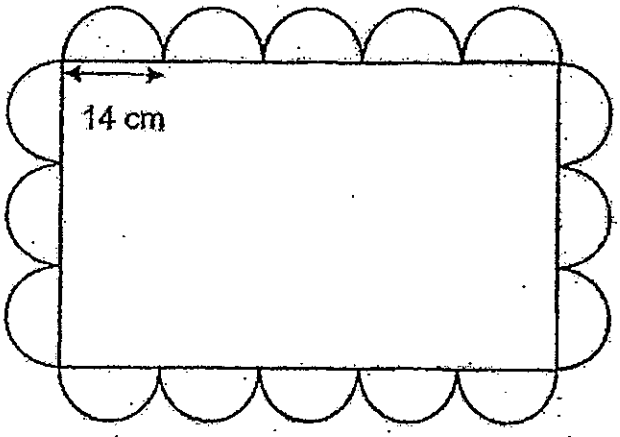
(a) How many red clips did he have?

Ans: (a) _____ [2]

(b) Karl packed all the blue clips into small, medium, and large boxes. He filled each small box with 2 clips, each medium box with 3 clips and each large box with 6 clips. All the boxes were full and there was no clips left over. What was the least number of boxes used by Karl?

Ans: (b) _____ [2]

16 The figure below is made up of 16 identical semicircles and a rectangle. The diameter of each semicircle is 14 cm. (Take $\pi = \frac{22}{7}$)



(a) Find the perimeter of the figure.

Ans: (a) _____ [2]

(b) Find the area of the figure.

Ans: (b) _____ [3]

17 The amount of money Kathy had to the amount of money Alice had was 3 : 4. After Kathy spent $250 on a bag and gave $50 to Alice, the ratio became 1 : 2.

(a) How much money did Alice have at first?

Ans: (a) _____ [3]

(b) How much money did Kathy have at the end?

Ans: (b) _____ [2]

End of Paper

NANYANG PRIMARY SCHOOL

MID-YEAR EXAMINATION 2022

PRIMARY 6

MATHEMATICS PAPER 1 (BOOKLET A)

Total Duration for Booklets A and B: 1 hour

Additional materials: Optical Answer Sheet (OAS)

INSTRUCTIONS TO PUPILS

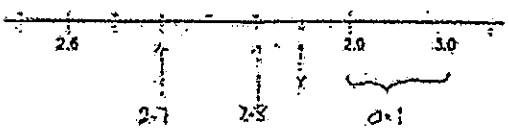
1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Shade your answers in the Optical Answer Sheet (OAS) provided.
5. The use of calculators is NOT allowed.

Name: _____ ( )

Class: Primary 6 ( )

Questions 1 to 18 carry 3 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 In the number line below, what is the value of Y?



(1) 2.85
(2) 2.8
(3) 2.75
(4) 2.7

0.1 ÷ 2
= 0.05 (each space)
Y = 2.8 + 0.05
= 2.85 (1)

2 Find the value of $\frac{5}{6} \div \frac{1}{4}$.

(1) $\frac{10}{3}$
(2) $\frac{5}{24}$
(3) $\frac{3}{10}$
(4) $\frac{24}{5}$

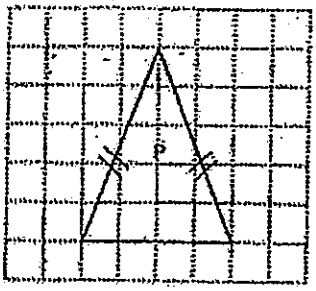
$\frac{5}{6} \div \frac{1}{4}$ (KFC)
$= \frac{5}{\cancel{6}3} \times \frac{\cancel{4}^2}{1}$
$= \frac{10}{3}$ (1)

3 Which of the following is the same as 25% of 20%?

(1) $\frac{1}{4} \times \frac{1}{5}$
(2) $\frac{3}{4} \times \frac{1}{5}$
(3) $\frac{1}{4} \times \frac{4}{5}$
(4) $\frac{3}{4} \times \frac{4}{5}$

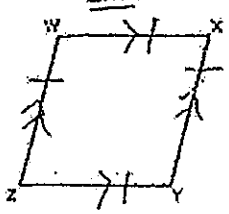
25% × 20%
$= \frac{25}{100} \times \frac{20}{100}$
$= \frac{1}{4} \times \frac{1}{5}$ (1)

4 The square grid below shows Triangle P. What type of triangle is Triangle P?



(1) Obtuse-angled triangle
(2) Right-angled triangle
(3) Equilateral triangle
(4) Isosceles triangle (4)

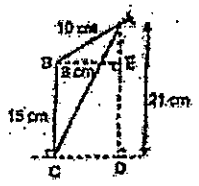
5 In the figure below, WXYZ is a rhombus.



Which one of the following is false?

(1) WX // ZY — True
(2) ∠XYZ = ∠XWZ — True
(3) ∠WZY = ∠ZWX — False
(4) ∠WZY + ∠XYZ = 180° — True (3)

6 ABC is a triangle with AB = 10 cm and BC = 15 cm. BE = 8 cm and AD = 21 cm. Find the area of triangle ABC.



base $\frac{1}{2}$ ht

B C $\frac{1}{2}$ BE

$\frac{1}{2} \times \frac{15}{1} \times \frac{8}{1}$

$= 60$ (2)

(1) 40 cm²
(2) 60 cm²
(3) 75 cm²
(4) 84 cm²

7 What is the area of a circle with diameter 60 cm? (Take $\pi = 3.14$)

d=60, r=30

Area $= \pi r^2$

$= 3.14 \times 30 \times 30$

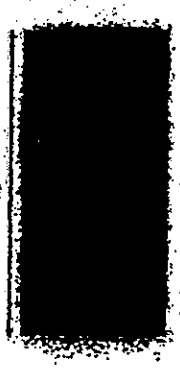
$= 3.14 \times 3 \times 3 \times 100$

$= 28.26 \times 100$

$= 2826$ (3)

(1) 94.2 cm²
(2) 188.4 cm²
(3) 2826 cm²
(4) 11304 cm²

8 Which of the following is likely to be the length of an approved scientific calculator for PSLE?



(1) 0.018 m
(2) 0.18 m
(3) 1.8 m
(4) 18 m

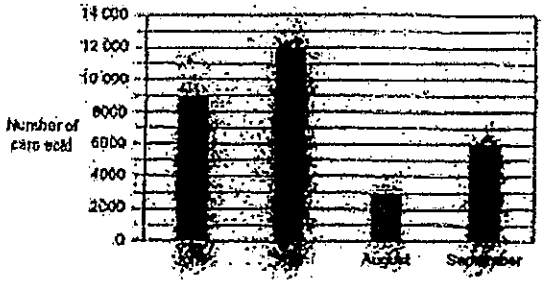
length ≈ short ruler length

so the length not more than 20cm or 0.2m.

(2)

Use the information below to answer questions 9 and 10.

The bar graph below shows the number of cars sold from June to September.



9 In which month was the number of cars sold half as many as the number of cars sold in September?

Sep → 6000

6000 ÷ 2 = 3000

(August)

(3)

(1) June
(2) July
(3) August
(4) September

10 Which one of the following statements is true?

9000

(1) The number of cars sold in June was 8000. (false)

(2) The number of cars sold in July is $\frac{3}{4}$ the number of cars sold in June.

July : June

12000 : 9000 = 12 : 9 = 4 : 3 (false)

(3) The increase in the number of cars sold from August to September was 3000. Aug → 3000, Sep → 6000, ↑ 6000 − 3000 = 3000 (false)

(4) The total number of cars sold in June and August is the same as the number of cars sold in July. June → 9000, Aug → 3000, July → 12000. 9000 + 3000 = 12000. (true) (4)

11 Last month, the florist sold 800 roses. This month, she sold 1000 roses. What was the percentage increase in the number of roses sold?

$\frac{\uparrow}{\text{original}} \times 100\%$

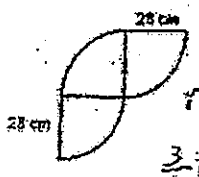
$= \frac{1000 - 800}{800} \times 100\%$

$= \frac{200}{800} \times 100\%$ (2)

$= 25\%$

(1) 20%
(2) 25%
(3) 80%
(4) 200%

12 The figure below is made up of 3 identical quarter circles of radius 28 cm. Find its perimeter. (Take $\pi = \frac{22}{7}$)



$r=28$, $d=56$

$\frac{3}{4}\pi d + 28 + 28$

$= \frac{3}{4} \times \frac{22}{7} \times \frac{56}{1} + 56$

$= 66 \times 2 + 56$

$= 132 + 56$

$= 188$ (3)

(1) 132 cm
(2) 178 cm
(3) 188 cm
(4) 232 cm

13 A lollipop cost $0.70. There were 80 lollipops in a box. Janie bought 8 such boxes of lollipops for her class party. How much did she spend on the lollipops?

$0.7 \times 80 \times 8$

$= 0.7 \times 8 \times 10 \times 8$

$= 5.6 \times 10 \times 8$

$= 56 \times 8$

$= 448$ (3)

(1) $408
(2) $428
(3) $448
(4) $560

14 An empty rectangular tank was 40 cm long, 20 cm wide and 30 cm high. Mary poured some water into it and the water level reached a height of 30 cm. How many litres of water were there in the tank?

$40 \times 20 \times 30 \text{ cm}^3$

$= 8 \times 3 \times 1000 \text{ cm}^3$

$= 24\,000 \text{ cm}^3$

$= 24 \text{ l}$ (3)

(1) 24 000
(2) 24 000
(3) 24
(4) 24

15 Ranjeet and Samy made some birthday cards over two days. On Saturday, Ranjeet made 29 more cards than Samy. On Sunday, Ranjeet made another 30 cards and Samy made another 25 cards. At the end of the two days, Ranjeet made $\frac{3}{5}$ of the total number of cards. What was the total number of cards Samy made over the two days?

	Sat	Sun	
S →	1 unit	+25	→ $\frac{2}{5}$ of total
R →	1 unit +29	+30	→ $\frac{3}{5}$ of total

Compare S + R.

$(29+30) - 25 \longrightarrow \frac{1}{5}$ of total

$59 - 25$

$= 34 \longrightarrow \frac{1}{5}$ of total

$34 \times 2 \longrightarrow \frac{2}{5}$ of total

$= 68$ (2)

(1) 34
(2) 68
(3) 102
(4) 170

NANYANG PRIMARY SCHOOL

MID-YEAR EXAMINATION
2022

PRIMARY 6

MATHEMATICS
PAPER 1
(BOOKLET B)

Total Duration for Booklets A and B: 1 hour

INSTRUCTIONS TO PUPILS

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

Name: _____ ( )

Class: Primary 6 ( )

Booklet B	/25

Please sign and return the examination paper the next day. Any queries should be raised at the same time when returning paper.

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 $3\frac{1}{4}$ as a decimal.

$3\frac{1}{4} \times 25 = 3\frac{25}{100}$

$= 3.25$ (ans)

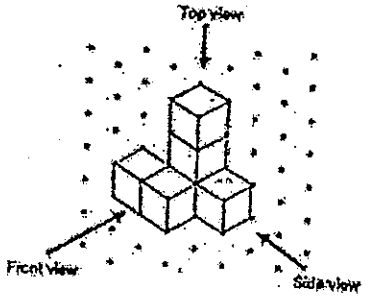
Ans: 3.25

17 The volume of a cube is 125 cm³. Find the length of one edge of the cube.

$\sqrt[3]{125} = 5$ cm (ans)

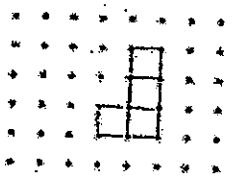
Ans: 5 cm

18 6 unit cubes were stacked and glued together to form the solid below.



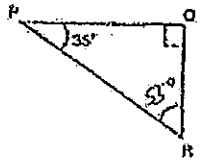
Draw the side view of the solid on the grid below.

Side View



Use dark pencil and ruler to draw.

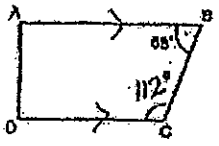
19 In the figure below, PQR is a right-angled triangle. $\angle QPR = 35°$. Find $\angle PRQ$.



$90° - 35° = 55°$ (ans)

Ans: 55

20 In the figure below, ABCD is a trapezium and AB is parallel to DC. $\angle ABC = 68°$. Find $\angle BCD$.

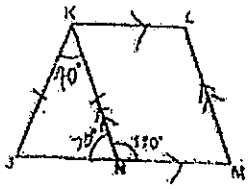


$180° - 68° = 112°$ (ans)

Ans: 112

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 In the figure below, JKN is an isosceles triangle and KLMN is a parallelogram. JNM is a straight line and JK = KN. $\angle KNM = 110°$. Find $\angle JKN$.



$180° - 110° = 70°$

$180° - 70° - 70° = 40°$ (ans)

Ans: 40

22 Find the circumference of a circle of radius 5 cm. (Take $\pi = 3.14$)

$r = 5$, $d = 10$

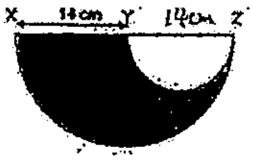
πd

$= 3.14 \times 10$

$= 31.4$ (ans)

Ans: 31.4 cm

23 The figure below is made up of 2 semicircles. XY is half of XZ. XY = 14 cm. Find the area of the shaded part. (Take $\pi = \frac{22}{7}$)



$A = \pi r^2$

d of small ◡ = 14cm
r. of small ◡ = 7cm
r. of big ◡ = 14cm

shaded area = $(\frac{1}{2} \times \frac{22}{7} \times 14 \times 14) - (\frac{1}{2} \times \frac{22}{7} \times 7 \times 7)$
= (22 × 14) − 77
= 308 − 77
= 231 (ans) cm²

Ans: 231 cm²

5

26 Two numbers add up to 364. One of the numbers is a 2-digit number and the other is a 3-digit number. What is the smallest possible difference between the two numbers?

__ __ + __ __ __ = 364

To get the smallest possible difference
→ 3-digit number must be as small as possible
and 2-digit number must be as large as possible.
Hence, 2-digit number → 99
364 − 99 = 265
So, diff → 265 − 99 = 166 (ans)

Ans: 166

27 Use all the digits 7, 0, 4 and 5 to form

(a) the smallest multiple of 10

ones digit must be 0
so arrange the rest of the digits from smallest to largest
4570 (ans)

Ans: (a) 4570

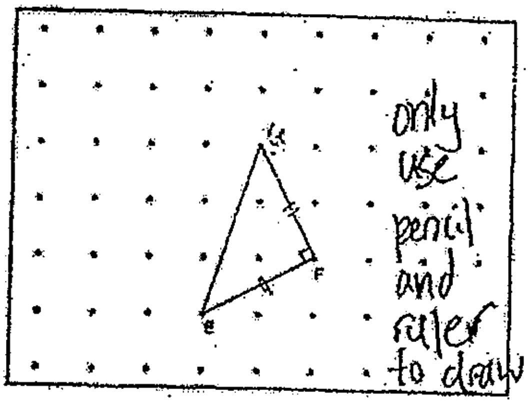
(b) the even number closest to 5000

ones digit must be either 0 or 4.
to be close to 5000, number must be more than 4000 and less than 6000.
possible numbers → 4750 or 5470 or 5074
but 5074 (ans) is closest to 5000.

Ans: (b) 5074

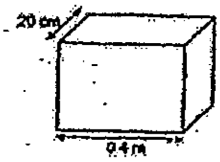
7

24 A straight line EF is drawn on a square grid inside a box.



G is one of the dots inside the box. Draw two lines FG and EG to complete triangle EFG with ∠EFG = 90° and EF = FG.

25 A cuboid is 0.4 m long and 20 cm wide. It has a volume of 20 000 cm³. Find the height of the cuboid.



0.4m = 40cm
$\frac{20\,000}{20 \times 40} = 25$ (Ans)

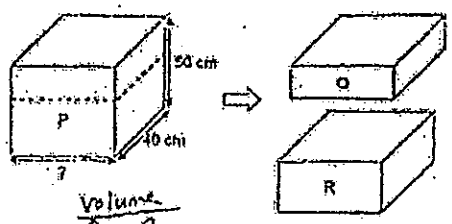
Ans: 25 cm

28 Shanice had a bottle of shampoo. She used an equal amount of shampoo each day. At the end of the 7th day, $\frac{4}{5}$ of the bottle was left. At the end of the 15th day, the amount of shampoo left was 280 ml. What was the amount of shampoo in the bottle at first?

7 days → used $\frac{1}{5}$ of bottle $(1 - \frac{4}{5} = \frac{1}{5})$
1 day → used $\frac{1}{5} \div 7$
$= \frac{1}{5} \times \frac{1}{7}$
$= \frac{1}{35}$
15 days → $\frac{1}{35} \times \frac{15}{1} = \frac{3}{7}$ used
$1 - \frac{3}{7} = \frac{4}{7}$
$\frac{4}{7}$ of bottle → 280
$\frac{1}{7}$ of bottle → 280 ÷ 4 = 70
$\frac{7}{7}$ of bottle → 70 × 7 = 490 ml (ans)

Ans: 490 ml

29 A rectangular block P was cut along the dotted line into two smaller rectangular blocks Q and R as shown below. The volume of Q was $\frac{2}{3}$ the volume of R. The difference in volume between Q and R was 12 000 cm³. Find the unknown edge of block P.



Volume
Q : R
2 : 3

3u - 2u = 1u
1u = 12 000
Q + R = P
2u + 3u = 5u
5u = 12 000 × 5
= 60 000
120 × 60 000 / 50 × 40 = 30 cm (ans)

Ans: 30 cm

30 Devi collected $\frac{5}{12}$ as many foreign coins as Hanimah. Hanimah collected $\frac{8}{7}$ as many foreign coins as Ling. What was the ratio of the number of foreign coins Devi collected to the number of foreign coins Ling collected?

D : H | H = H (Common Identity → H)
5 : 12 | 8 : 7
×8 ×2
= 12 : 14

D : L
5 : 14 (ans)

Ans: 5 : 14

End of Paper

NANYANG PRIMARY SCHOOL

MID-YEAR EXAMINATION
2022

PRIMARY 6

MATHEMATICS
PAPER 2

Duration: 1 hour 30 minutes

INSTRUCTIONS TO PUPILS

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Write your answers in this booklet.
5. The use of an approved calculator is allowed.

Name: _____ ( )

Class: Primary 6 ( )

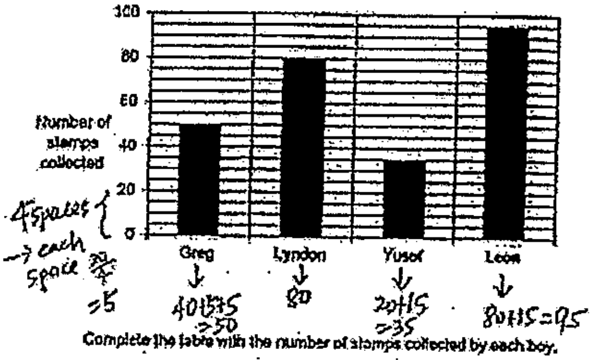
Parent's Signature: _____

Booklet A	/20
Booklet B	/25
Paper 2	/55
Total	/100

Please sign and return the examination paper the next day. Any queries should be raised at the same time when returning paper.

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. The bar graph below shows the number of stamps collected by 4 boys.



Complete the table with the number of stamps collected by each boy.

Name	Number of stamps collected
Greg	50
Lyndon	80
Yusof	35
Leon	95

2 A bicycle wheel of diameter 80 cm made 3 complete turns. Find the distance covered. (Take π = 3.14)

d = 80

Distance = $\pi d \times 3$

= $3.14 \times 80 \times 3$

= 753.6 cm (ans)

Ans: 753.6 cm

3 Mr Tan bought a laptop. The price of the laptop before GST was $2500. He had to pay GST of 7% on the price of the laptop. What was the amount of GST he had to pay?

$\frac{7}{100} \times 2500$ = $175 (ans)

Ans: $ 175

4 A machine started printing brochures at 8 a.m. on Wednesday at a rate of 800 brochures per hour. After every 5 hours of printing, it would be stopped for an hour to cool down. How many brochures were printed by 5 a.m. the next day?

8 a.m. (Wed) — 5h — 1pm, 2p.m. — 5h — 7pm, 8pm — 5h — 1am, 2am (next day) — 4h — 6am (next day)

Total hours printing → 5+5+5+4 = 19

19 × 800 = 15 200 (ans)

Ans: 15 200

5 Kendrik bought 4 different storybooks. The first storybook cost $14 and the average cost of the remaining storybooks was $\frac{3}{7}$ of the cost of the first storybook. How much did he pay for all the storybooks?

$\frac{3}{7} \times 14 = 6$

$6 \times 3 = 18$

18 + 14 = 32 (ans)

Ans: $ 32

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 The figure is made up of a rectangle and a triangle overlapping each other as shown. $\frac{1}{4}$ of the rectangle and $\frac{2}{5}$ of the triangle is unshaded. The area of the unshaded part of the figure is 57 cm².

Rect
Shaded : Unshaded : total
3 : 1 : 4 (×2)
= 6 : 2 : 8
triangle
shaded : Unshaded : total
3 : 2 : 5
(Unshaded overlap → make unshaded units same)

(a) Find the area of the rectangle.

2u = 57

8u = $\frac{57}{2} \times 8$

= 228 cm² (ans)

Ans: (a) 228 cm² [1]

(b) What fraction of the figure is unshaded?

$\frac{\text{Unshaded}}{\text{total}} = \frac{2}{6+2+3}$

$= \frac{2}{11}$ (ans)

Ans: (b) $\frac{2}{11}$ [2]

7

7 The figure below is made up of a quarter circle and a triangle. The radius of the quarter circle is 20 m. Find the area of the shaded part. (Take $\pi = 3.14$)

Area of circle $= \pi r^2$

Shaded area = Area of Quarter circle − Area of triangle

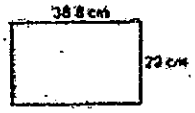
$= \frac{1}{4}\pi r^2 - \frac{1}{2}bh$

$= (\frac{1}{4} \times 3.14 \times 20 \times 20) - (\frac{1}{2} \times 20 \times 20)$

$= 114 m^2$ (ans)

Ans: $114 m^2$ [3]

8 Joe had a rectangular piece of paper, 36.8 cm by 29 cm, as shown below. He cut out as many squares as possible from the paper. The side of each square was 5 cm. At most, how many squares did Joe cut out?



$36.8 \div 5 \approx 7$

$29 \div 5 \approx 5$

$7 \times 5 = 35$ (ans)

Ans: 35 [3]

6

9 Suzi formed a solid using some 2-cm, 3-cm and 5-cm cubes. She used a total of 18 cubes to form the solid. The total volume of the solid was 707 cm^3. How many 2-cm cubes did Suzi use?

$2 \times 2 \times 2 = 8$

$3 \times 3 \times 3 = 27$

$5 \times 5 \times 5 = 125$

$707 \div 125 \approx 5$

estimate a number of 5-cm cubes

So guess + check.

① $5 \times 125 = 625$

$707 - 625 = 82$

$1 \times 8 + 3 \times 27 \neq 82$

trying all possible numbers, cannot get 82.

② $4 \times 125 = 500$ (4 5-cm cubes)

$707 - 500 = 207$ ✓ (Note: 18 cubes − 4 cubes = 14 cubes left)

$5 \times 27 + 9 \times 8 = 207$ ✓

(5 3-cm cubes) (9 2-cm cubes)

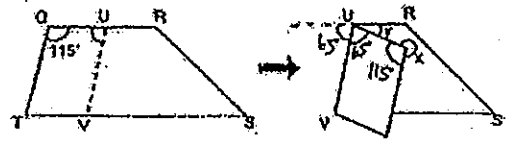
last check → $4 + 5 + 9 = 18$ cubes ✓

→ $(4 \times 125) + (5 \times 27) + (9 \times 8) = 707$ ✓

Ans: 9 [3]

6

10 The following diagram shows a piece of paper QRST in the shape of a trapezium. $\angle QTR = 115°$. The paper is folded along line UV which is parallel to QT.



(a) Find $\angle x$.

$360° - 115° = 245°$ (ans)

Ans: (a) 245° [1]

(b) Find $\angle y$.

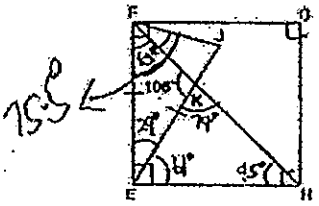
$180° - 115° = 65°$

$180° - 65° - 65° = 50°$ (ans)

Ans: (b) 50° [2]

7

11 In the figure below, EFGH is a square. $\angle FKE = 106°$ and FE = EJ. FGH and JKE are straight lines. Find $\angle KFJ$.



$180° - 106° = 74°$

$180° - 74° - 45° = 61°$

$90° - 61° = 29°$

$\frac{180° - 29°}{2} = 75.5°$

$75.5° - 45° = 30.5°$ (ans)

Ans: 30.5° [4]

8

12 There are two different shops offering the following discounts for the same bag priced at $95 before discount.

(a) Which shop sold the bag at a lower price? Show your working clearly.

A → discount = $\frac{20}{100} \times 395$

= $19 ✓ more discount,

B → discount = $15 so price later as both used prices the same.

Ans: (a) Shop A [2]

(b) Lisa had $100. She bought the bag from the shop that offered a lower price. How much money did she have left?

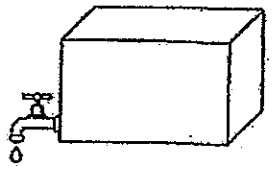
95 − 19 = 76

$100 − $76 = $24 (ans)

(b) $24 [2]

9

13 A rectangular tank with a base area of 3500 cm² and a height of 80 cm was $\frac{1}{4}$ filled with water at first. At 8 a.m., a tap was turned on and water was drained from the tank at the rate of 4 litres per minute. At 8.06 a.m., the tap was turned off.



(a) How much water was drained from the tank?

8 a.m. → 8.06 a.m.

6 min

6 × 4 L = 24 L (ans)

Ans: (a) 24 L [1]

(b) After the tap was turned off, how much more water was needed to fill the tank completely?

$\frac{1}{4} \times 3500 \times 80 = 70000$

70 000 − 24 000 = 46 000

(3500 × 80) − 46 000 = 234 000 cm³ (ans)

Ans: (b) 234 000 cm³ [3]

10

14 A pencil and an eraser cost $1.05. The pencil and a ruler cost $0.85. Bernice paid $6.90 for 8 such pencils and 5 such erasers. Chandra paid $3.30 for some rulers.

(a) What was the cost of one such eraser?

1P + 1E = 1.05 ‖ 8P + 5E = 6.90

1P + 1R = 0.85

8P + 8E = 1.05 × 8

= 8.40

3E = 8.40 − 6.90

= 1.5

1E = 1.5 ÷ 3

= 0.50 (ans)

Ans: (a) $0.50 [2]

(b) How many such rulers did Chandra buy?

1P = 1.05 − 0.5

= 0.55

1R = 0.85 − 0.55

= 0.30

3.3 ÷ 0.3 = 11 (ans)

Ans: (b) 11 [2]

11

15 Karl had clips of four different colours. $\frac{1}{8}$ of the clips were white and $\frac{2}{7}$ of the remaining clips were red. He had an equal number of blue clips and yellow clips. Karl had 35 blue clips.

(a) How many red clips did he have?

Clips → $\frac{1}{8}$ white

→ $\frac{7}{8}$ remaining → $\frac{2}{7}$ red

→ $\frac{5}{7}$ (B + Y)

$\frac{5}{7}$ of remaining → 35 + 35 = 70

$\frac{1}{7}$ of remaining → 70 ÷ 5 = 14

R → $\frac{2}{7}$ of remaining → 14 × 2 = 28 (ans)

Ans: (a) 28 [2]

(b) Karl packed all the blue clips into small, medium, and large boxes. He filled each small box with 2 clips, each medium box with 3 clips and each large box with 6 clips. All the boxes were full and there was no clips left over. What was the least number of boxes used by Karl?

? small × 2 + ? medium × 3 + ? large × 6 = 35

35 ÷ 6 = 5 R 5 (5 = 2 + 3)

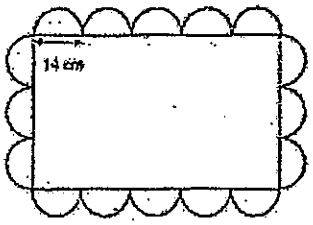
(1 × 2) + (1 × 3) + (5 × 6) = 35

1 + 1 + 5 = 7 (ans)

Ans: (b) 7 [2]

12

16 The figure below is made up of 16 identical semicircles and a rectangle. The diameter of each semicircle is 14 cm. (Take $\pi = \frac{22}{7}$)



(a) Find the perimeter of the figure.

16 semicircles = 8 circles

$\pi d \times 8 = \frac{22}{7} \times \frac{14}{1} \times 8$

= 352 cm

Ans: (a) 352cm [2]

(b) Find the area of the figure.

$8 \times \pi r^2 + L \times B$

$= (8 \times \frac{22}{7} \times 7 \times 7) + (70 \times 42)$

$= 1232 + 2940$

$= 4172 \text{ cm}^2$ (ans)

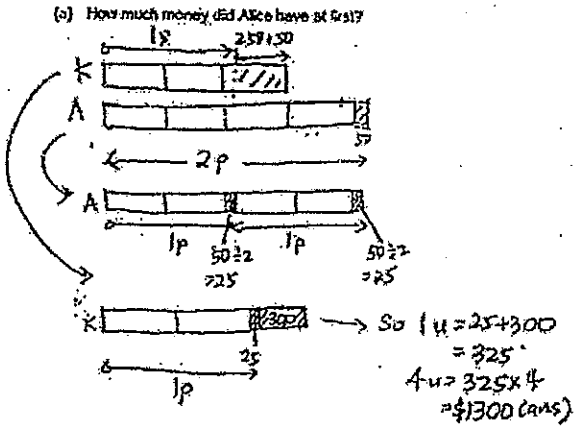
L = 14 x 5 = 70

B = 14 x 3 = 42

Ans: (b) 4172cm² [3]

17 The amount of money Kathy had to the amount of money Alice had was 3 : 4. After Kathy spent $250 on a bag and gave $50 to Alice, the ratio became 1 : 2.

(a) How much money did Alice have at first?



So 1u = 25+300

= 325

4u = 325 x 4

= $1300 (ans)

Ans: (a) $1300 [3]

(b) How much money did Kathy have at the end?

1p = 2u + 25

= 2 x 325 + 25

= 650 + 25

= 675 (ans)

Ans: (b) $675 [2]

End of Paper

10

END