NANYANG PRIMARY SCHOOL

END-OF-YEAR EXAMINATION 2022

PRIMARY 5

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 5 ( )

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

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 742.896, which digit is in the hundredths place?

(1) 6

(2) 7

(3) 8

(4) 9

2 Which of the following is the same as 20 ml?

(1) 2 ℓ

(2) 0.2 ℓ

(3) 0.02 ℓ

(4) 0.002 ℓ

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

3 There are 30 chocolate cookies, 18 raisin cookies and 48 butter cookies. What is the ratio of the number of chocolate cookies to the number of raisin cookies to the number of butter cookies?

(1) 5 : 3 : 8

(2) 3 : 5 : 8

(3) 5 : 3 : 6

(4) 6 : 3 : 8

4 Sindri worked for 30 hours. He was paid $600. How much was he paid per hour?

(1) $5

(2) $2

(3) $20

(4) $50

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

5 Shahul had $2500. He spent $2000. What percentage of his money did he spend?

(1) 20%

(2) 25%

(3) 80%

(4) 125%

6 There were 960 people in a concert. 60% of them were adults. How many adults were there at the concert?

(1) 384

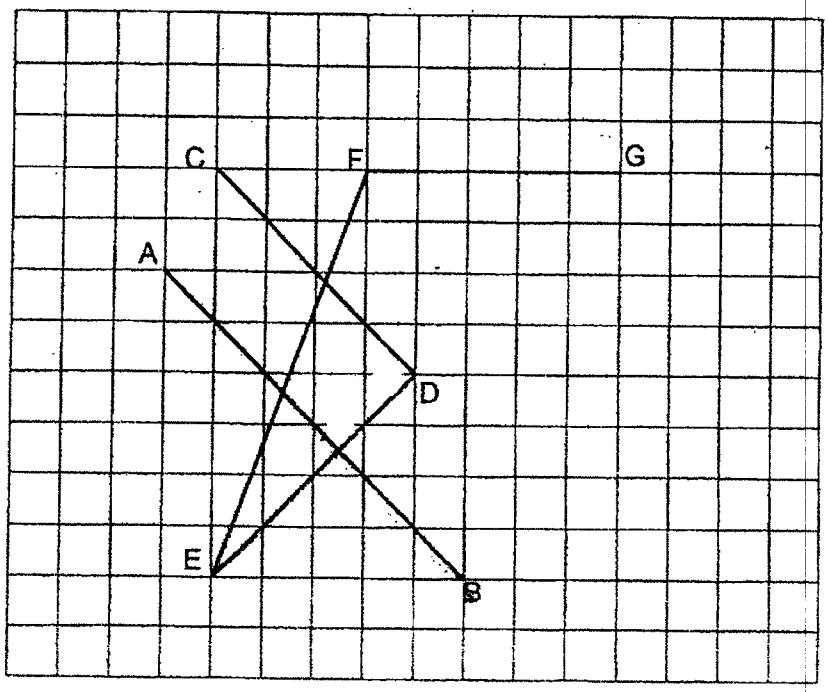
(2) 576

(3) 588

(4) 768

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

7 Which line in the square grid is perpendicular to AB?



(1) DE

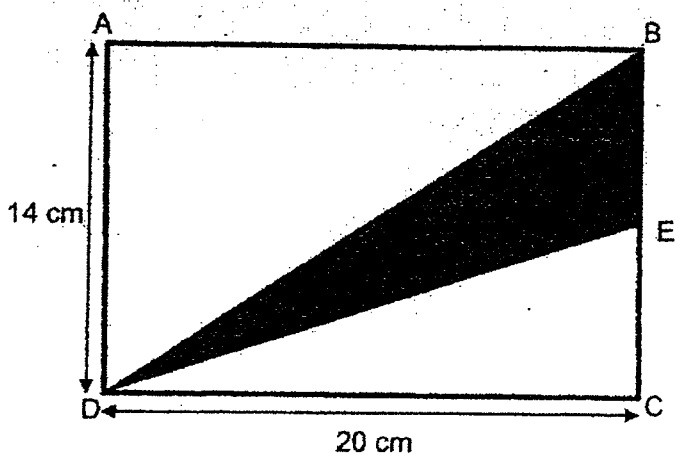
(2) EF

(3) CD

(4) FG

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

8 In the figure below, ABCD is a rectangle. E is a point on BC. BE is half the length of BC, DC = 20 cm and AD = 14 cm. Find the area of triangle BDE.



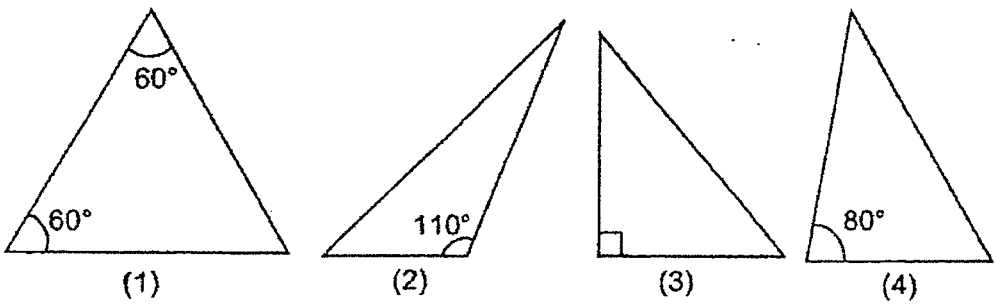
(1) 35 cm²

(2) 70 cm²

(3) 140 cm²

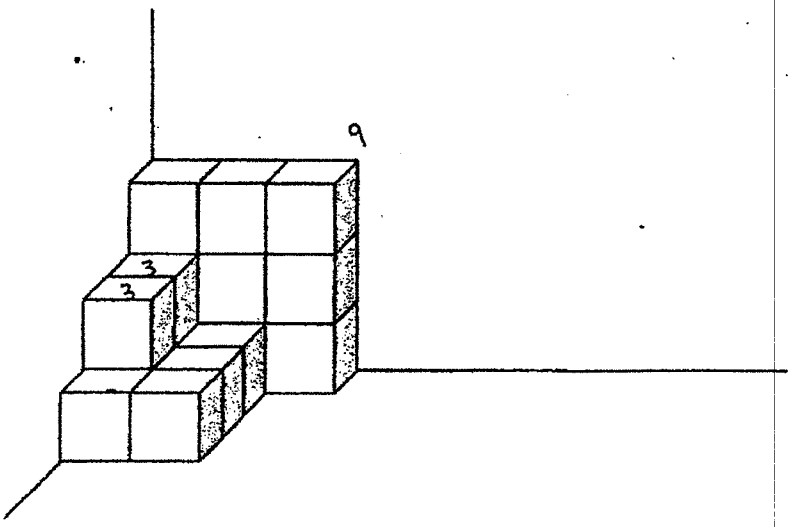
(4) 280 cm²

9 Which of the following triangles is an equilateral triangle?



For more papers, Go to: SeriousAboutSchool.com/OnlineExams

10 The solid below is formed by unit cubes. How many unit cubes are there?



(1) 12

(2) 17

(3) 18

(4) 26

11 Which one of the following fractions is closest to 2?

(1) $2\frac{2}{3}$

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

(3) $1\frac{1}{6}$

(4) $1\frac{7}{8}$

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12 Jasmine scored an average of 70 marks for a Mathematics test and a Science test. She scored 68 marks for the Mathematics test. How many marks did she score for the Science test?

(1) 66

(2) 69

(3) 72

(4) 138

13 Mandy had 408 ℓ of milk. She poured all the milk into 400 bottles. Each bottle contained the same amount of milk. How many litres of milk did each bottle contain?

(1) 1.02

(2) 1.2

(3) 10.2

(4) 12

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14 Noah bought $\frac{7}{8}$ kg of grapes. He ate $\frac{1}{3}$ of it. How many kilograms of grapes had he left?

(1) $\frac{5}{12}$

(2) $\frac{7}{12}$

(3) $\frac{7}{24}$

(4) $\frac{13}{24}$

15 Mrs Tan cooks 0.35 kg of rice every day. How many kilograms of rice does she cook in 60 days?

(1) 2.1

(2) 3.5

(3) 18

(4) 21

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NANYANG PRIMARY SCHOOL

END-OF-YEAR EXAMINATION 2022

PRIMARY 5

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 5 ( )

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.

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

(5 marks)

16 Find the value of $14 + (30 - 18) \div 6 \times 2$.

Ans: _____

17 Find the value of $923 \div 4$. Express your answer as a decimal.

Ans: _____

18 What is the missing number in the box?

$4 : 7 = 32 : \square$

Ans: _____

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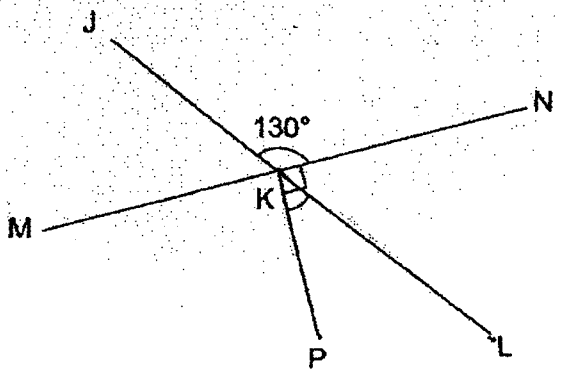
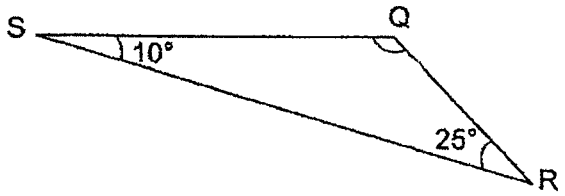
19 In the figure below, JKL and MKN are straight lines. $\angle NKP = 90°$ and $\angle JKN = 130°$. Find $\angle PKL$.



Ans: _____ °

---

20 In the figure below, QRS is a triangle. $\angle QSR = 10°$ and $\angle QRS = 25°$. Find $\angle SQR$.



Ans: _____ °

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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)

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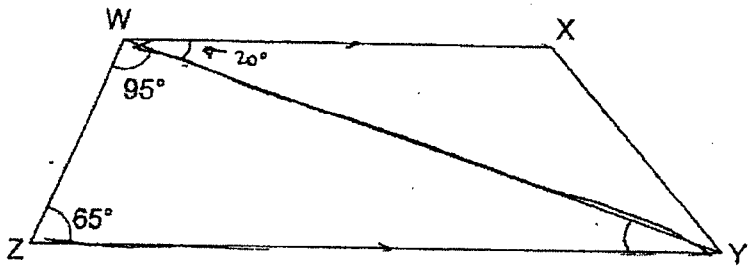
21 In the figure below, WXYZ is a trapezium. WX // ZY, $\angle ZWY = 95°$ and $\angle WZY = 65°$. Find $\angle YWX$.



Ans: _____ °

---

22 Mrs Tan had some money at first. She spent $\frac{2}{3}$ of her money on a watch and $\frac{1}{5}$ of her money on food. She had \$100 left. How much did she have at first?

Ans: \$_____

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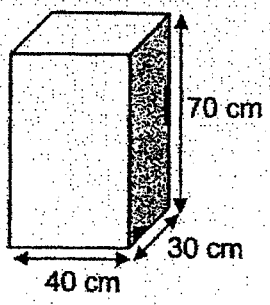
23 What is the volume of the cuboid shown below?

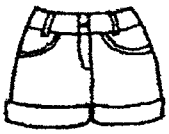


Ans: _____ cm^3

---

24 Find the average cost of the 3 items as shown below.

$36



$29.50

$42.50

Ans: $_____

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25 The mass of a book is 3.08 kg. Find the total mass of 6 such books.

Ans: _____ kg

---

26 The drink stall sold 2651 packet drinks in January. The number of packet drinks sold in February was 44 more than the number of packet drinks sold in January. How many packet drinks were sold in February? Round your answer to the nearest ten.

Ans: _____

---

27 Mrs Singh deposits $15 000 in the bank for one year. The bank offers an interest of 4% per year. How much will Mrs Singh have in her bank at the end of one year?

Ans: $_____

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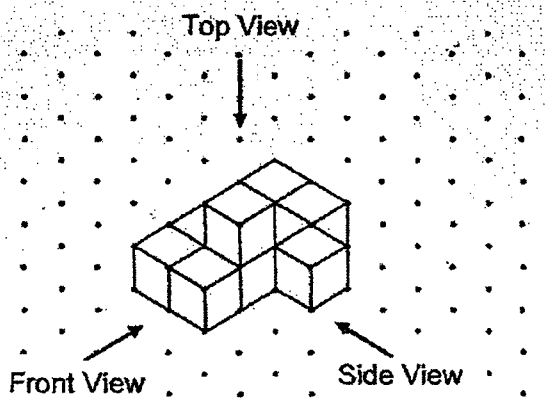
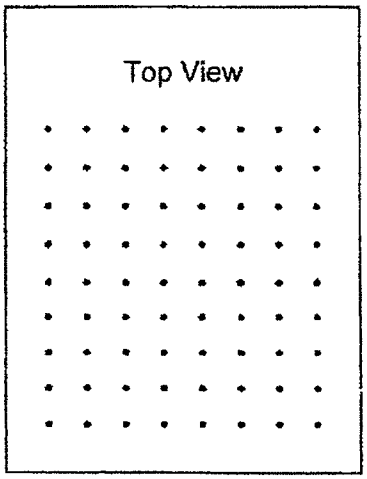
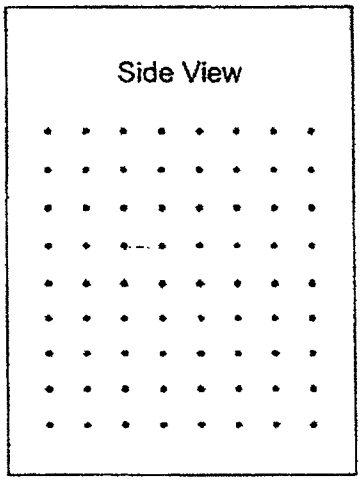
28 Nana stacked 10 unit cubes and glued them together to form the solid below.



Draw the top view and the side view of the solid on the grids below.





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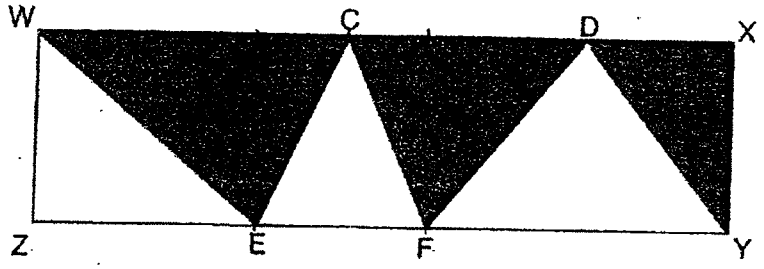
29 In the figure below, WXYZ is a rectangle. The area of rectangle WXYZ is 552 cm^2. C and D are points on WX. E and F are points on ZY. Find the total area of the shaded parts.



Ans: _____ cm^2

30 The average mass of Mei Mei and her cousins was 45 kg. Mei Mei's mass was 53 kg. The average mass of her cousins was 43 kg. How many cousins did Mei Mei have?

Ans: _____

End of Paper

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

NANYANG PRIMARY SCHOOL

END-OF-YEAR EXAMINATION 2022

PRIMARY 5

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 5 ( )

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.

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

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 Sarah spent $1\frac{1}{4}$ h in the morning to complete her Science project. She spent $1\frac{7}{10}$ h in the afternoon to complete her Chinese project. What was the total amount of time she spent on completing both her Science and Chinese projects?

Ans: _____ h

---

2 The side of a square is $6\frac{2}{5}$ cm. What is the perimeter of the square?

Ans: _____ cm

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3 The table below shows the number of books sold in Everygreen bookshop from January to May.

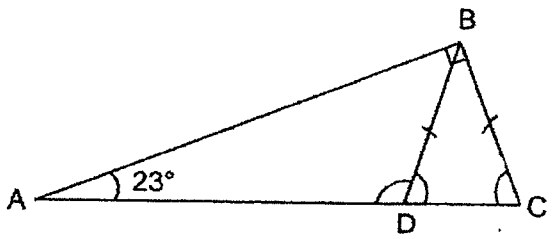
January	February	March	April	May
88	75	82	69	71

What was the average number of books sold from January to May?

Ans: _____

---

4 In the figure below, ABC is a right-angled triangle. D is a point on AC. $\angle BAC = 23°$, $\angle ABC = 90°$ and BC = BD. Find $\angle BDA$.



Ans: _____°

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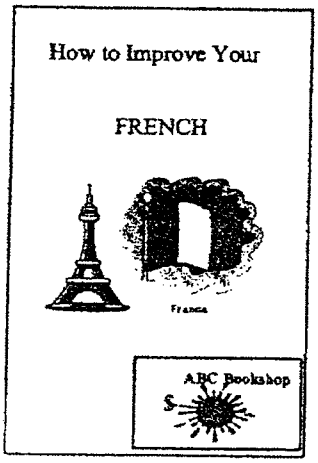
5 Junie bought a book from ABC Bookshop. She had forgotten how much she paid for the book. However, she remembered that the book cost $30 when rounded to the nearest dollar.

She remembered the following about the cost of the book:

- It showed 2 decimal places.
- All the digits are different.
- The digits she saw in the tenths and hundredths places are 1, 4 or 5.

How many possible costs of the book are there?



Ans: _____

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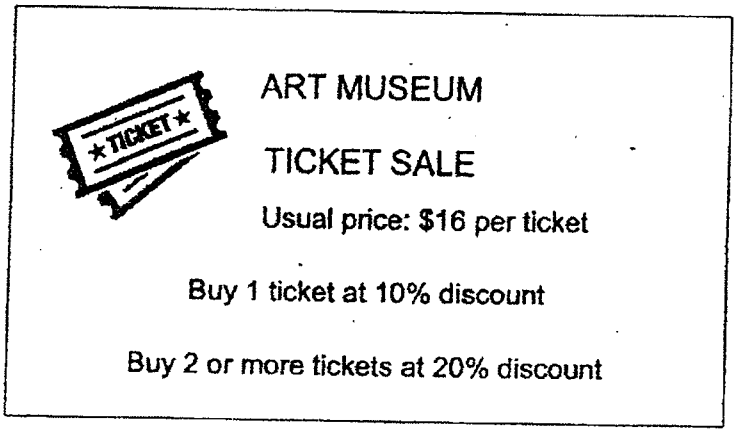
For questions **6** to **17**, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part-question. (45 marks)

6 Anna and James had the same amount of money at first. Anna bought some pens and had \$4.30 left. James wanted to buy highlighters only. The number of highlighters that James wanted to buy was the same as the number of pens Anna bought. However, he was short of \$8.70. Each pen cost \$1.20 and each highlighter cost \$2.50. How much money did Anna have at first?

Ans: _____ [3]

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

7 The Art Museum offers tickets on discount as shown in the flyer below.



(a) Mr Lim bought 1 ticket. How much did he pay?

Ans: (a) _____ [1]

(b) Mr Tan bought 3 tickets. What was the least amount of money he paid?

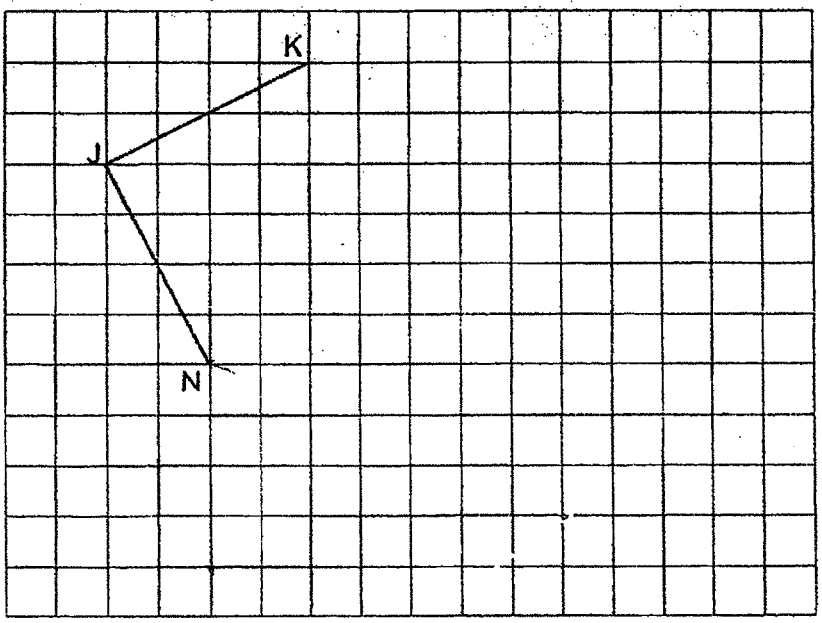
Ans: (b) _____ [2]

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

8 In the square grid below, JK and JN are straight lines.

(a) JK and JN form two sides of a square JKLN. Complete the drawing of the square JKLN. [1]

(b) JK and JN form two sides of a trapezium JKMN. KM is parallel to JN. Complete the drawing of trapezium JKMN such that the area of JKMN is $1\frac{1}{2}$ times of the area of JKLN. [2]



9 Chin Lee is 12 years older than Ming Shi. In 5 years' time, the ratio of Ming Shi's age to Chin Lee's age will be 5 : 9. How old is Chin Lee now?

Ans: _____ [3]

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

10 The average of 8 numbers is 45. When 2 of the numbers are removed, the average of the remaining numbers is 32. The difference between the 2 numbers that are removed is 6.

(a) Find the sum of the remaining numbers.

Ans: (a) _____ [1]

(b) What are the 2 numbers that are removed?

Ans: (b) _____ , _____ [2]

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11 Farhana baked some cupcakes. $\frac{1}{5}$ of the cupcakes were chocolate cupcakes and the rest were banana cupcakes. She sold $\frac{4}{7}$ of the chocolate cupcakes and 51 banana cupcakes. She then had $\frac{2}{5}$ of the cupcakes left.

(a) How many chocolate cupcakes did she sell?

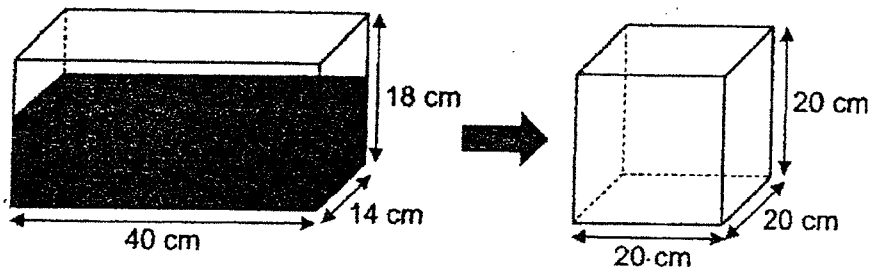
Ans: (a) _____ [2]

(b) How many cupcakes did she bake in all?

Ans: (b) _____ [2]

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

12 A tank measuring 40 cm by 14 cm by 18 cm was $\frac{3}{4}$-filled with water as shown below. All the water in the tank was poured into a cubical container of sides 20 cm.



(a) How much water was in the tank at first?

Ans: (a) _____ [2]

(b) How many more litres of water are needed to fill the cubical container to the brim?

(b) _____ [2]

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

13 Kean Yew had 7200 shuttlecocks. He packed the shuttlecocks into as many bags of 7 shuttlecocks as possible and had some shuttlecocks left unpacked. He sold all his shuttlecocks and received $3608. Each bag of shuttlecocks was sold at $3.50.

(a) How many shuttlecocks were left unpacked?

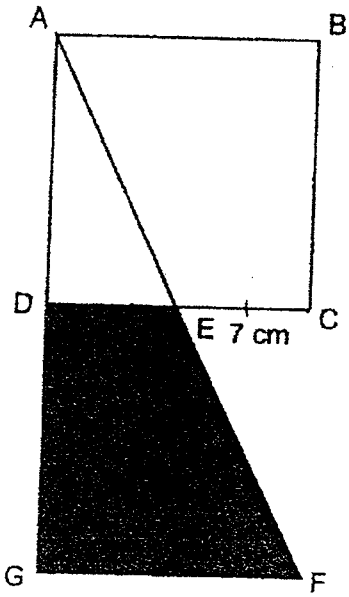
Ans: (a) _____ [1]

(b) Each of the shuttlecocks left unpacked was sold at the same price. How much did each of the shuttlecocks left unpacked was sold at?

Ans: (b) _____ [3]

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

14 The figure below shows a right-angled triangle AFG and a square ABCD overlapping each other. ADG is a straight line. $\angle AGF = 90°$, DC = GF and EC = 7 cm. The length of AB is twice the length of EC. Triangle AFG has the same area as square ABCD.



(a) What is the area of square ABCD?

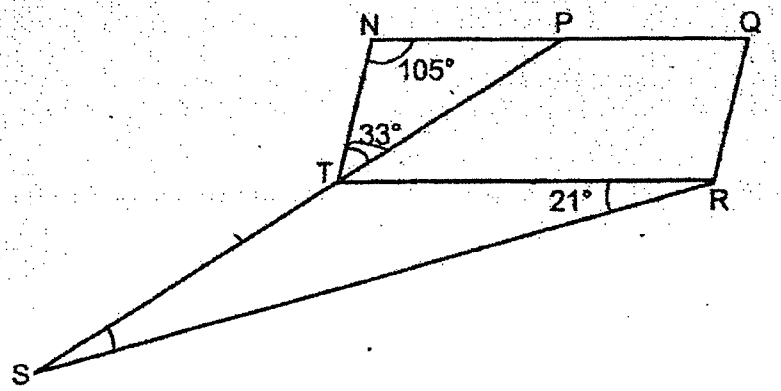
Ans: (a) _____ [2]

(b) Find the shaded area DEFG.

Ans: (b) _____ [2]

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

15 In the figure below, NQRT is a parallelogram. P is a point on NQ and PTS is a straight line. $\angle NTP = 33°$, $\angle PNT = 105°$ and $\angle TRS = 21°$.



(a) Find $\angle RST$.

Ans: (a) _____ [3]

(b) Circle the words that describe triangle RTS correctly in the following statement.

Triangle RTS (**is** / **is not**) an isosceles triangle because RT (**is** / **is not**) equal to ST.

[1]

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16 Cindy had a piece of ribbon. She used $\frac{2}{7}$ of the ribbon to make 15 small identical bows and 7 large identical bows. The length of ribbon used for 3 large bows was the same as the length of ribbon used for 5 small bows.

(a) How many large bows can she make with the same length of ribbon used for 15 small bows?

Ans: (a) _____ [1]

(b) How many small bows can she make with $\frac{3}{10}$ of the remaining ribbon?

Ans: (b) _____ [4]

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

17 Hon Lee formed some figures using squares and circles as shown below.

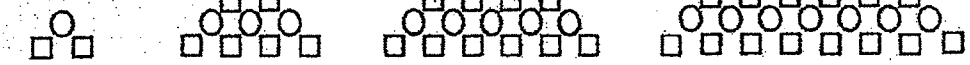


Figure 1 Figure 2 Figure 3 Figure 4

Figure	1	2	3	4
Number of circles	1	4	9	16
Number of squares	2	6	12	20
Total number of circles and squares	3	10	21	36

(a) Find the number of circles in Figure 8.

Ans: (a) _____ [1]

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

(b) Which figure in the pattern has 930 squares?

(b) Figure _____ [2]

(c) Find the total number of circles and squares in Figure 15.

(c) _____ [2]

End of Paper

For more papers, Go to: SeriousAboutSchool.com/OnlineExams

Nangay Primary School

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)

P5 2022
End of Year
SA 2
Paper 1

1 In 742.896, which digit is in the hundredths place?

↳ second decimal place

(1) 6

(2) 7

(3) 8

(4) 9

(4)

2 Which of the following is the same as 20 ml?

(1) 2 ℓ

(2) 0.2 ℓ

(3) 0.02 ℓ

(4) 0.002 ℓ

1 ℓ = 1000 mℓ

20 mℓ = (20 ÷ 1000) ℓ

= 0.02 ℓ

(3)

1

3 There are 30 chocolate cookies, 18 raisin cookies and 48 butter cookies. What is the ratio of the number of chocolate cookies to the number of raisin cookies to the number of butter cookies?

(1) 5:3:8

(2) 3:5:8

(3) 5:3:6

(4) 6:3:8

chocolate : raisin : butter

30 : 18 : 48

5 : 3 : 8

(1)

4 Sindri worked for 30 hours. He was paid $600. How much was he paid per hour?

(1) $5

(2) $2

(3) $20

(4) $50

$600 ÷ 30 = $600 ÷ 10 ÷ 3

= $60 ÷ 3

= $20

(3)

2

5 Shahul had $2500. He spent $2000. What percentage of his money did he spend?

(1) 20%

(2) 25%

(3) 80%

(4) 125%

$\frac{2000}{2500} = \frac{20}{25}$

$= \frac{80}{100}$

= 80 %

(3)

6 There were 960 people in a concert. 60% of them were adults. How many adults were there at the concert?

(1) 384

(2) 576

(3) 588

(4) 768

100 % → 960

1 % → 960 ÷ 100

= 9.6

60 % → 9.6 × 60

= 9.6 × 10 × 6

= 96 × 6

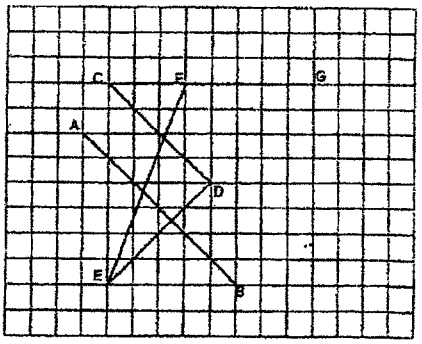
= 576

(2)

$\begin{array}{r} {}^{3}96 \\ \times 6 \\ \hline 576 \end{array}$

3

7 Which line in the square grid is perpendicular to AB?



(1) DE

(2) EF

(3) CD

(4) FG

(1)

4

Pg1

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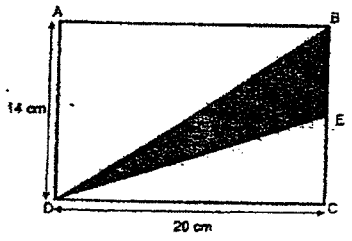
8 In the figure below, ABCD is a rectangle. E is a point on BC. BE is half the length of BC, DC = 20 cm and AD = 14 cm. Find the area of triangle BDE.

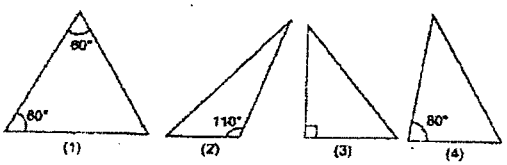


(1) 35 cm²
(2) 70 cm²
(3) 140 cm²
(4) 280 cm²

Length of BE = 14 ÷ 2
= 7

Area of △BDE = ½ × 20 × 7
= 10 × 7
= 70 (2)

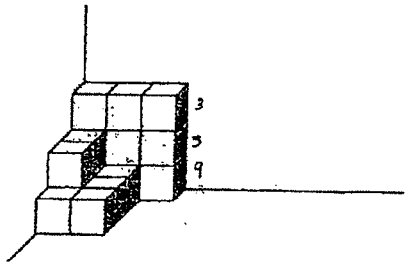
9 Which of the following triangles is an equilateral triangle?



(1)

5

10 The solid below is formed by unit cubes. How many unit cubes are there?



(1) 12
(2) 17
(3) 18
(4) 26

9 + 3 + 5 = 17

(2)

11 Which one of the following fractions is closest to 2?

(1) $2\frac{2}{3}$ difference → $\frac{2}{3}$
(2) $2\frac{1}{4}$ difference → $\frac{1}{4}$
(3) $1\frac{1}{8}$ difference → $\frac{5}{6}$
(4) $1\frac{7}{8}$ difference → $\frac{1}{8}$

(4)

8

12 Jasmine scored an average of 70 marks for a Mathematics test and a Science test. She scored 68 marks for the Mathematics test. How many marks did she score for the Science test?

(1) 66
(2) 69
(3) 72
(4) 138

Total → 70 × 2
= 140
140 − 68 = 72

(3)

13 Mandy had 408 ℓ of milk. She poured all the milk into 400 bottles. Each bottle contained the same amount of milk. How many litres of milk did each bottle contain?

(1) 1.02
(2) 1.2
(3) 10.2
(4) 12

408 ÷ 400 = 408 ÷ 4 ÷ 100
= 102 ÷ 100
= 1.02

(1)

7

14 Noah bought $\frac{7}{8}$ kg of grapes. He ate $\frac{1}{3}$ of it. How many kilograms of grapes had he left?

(1) $\frac{5}{12}$
(2) $\frac{7}{12}$
(3) $\frac{7}{24}$
(4) $\frac{13}{24}$

$1 - \frac{1}{3} = \frac{2}{3}$

Left → $\frac{7}{8} \times \frac{2}{3}$
= $\frac{14}{24}$
= $\frac{7}{12}$

(2)

15 Mrs Tan cooks 0.35 kg of rice every day. How many kilograms of rice does she cook in 60 days?

(1) 2.1
(2) 3.5
(3) 18
(4) 21

0.35 × 60 = 0.35 × 10 × 6
= 3.5 × 6
= 21

(4)

3
3.5
× 6
21.0

8

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

16 Find the value of $14 + (30 - 18) \div 6 \times 2$.

$14 + 12 \div 6 \times 2$

$= 14 + 2 \times 2$

$= 14 + 4$

$= 18$ (ans)

Ans: 18

17 Find the value of 923 ÷ 4. Express your answer as a decimal.

$$\begin{array}{r} 230.75 \\ 4\overline{)923.00} \\ -8 \\ \hline 12 \\ -12 \\ \hline 03 \\ -0 \\ \hline 30 \\ -28 \\ \hline 20 \\ -20 \\ \hline 0 \end{array}$$

Ans: 230.75

18 What is the missing number in the box?

4 : 7 = 32 : ☐

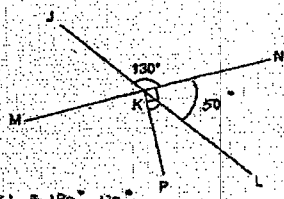
$32 \div 4 = 8$

$7 \times 8 = 56$ (ans)

Ans: 56

1

19 In the figure below, JKL and MKN are straight lines. $\angle NKP = 90°$ and $\angle JKN = 130°$. Find $\angle PKL$.



$\angle NKL = 180° - 130°$

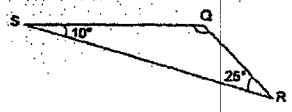
$= 50°$

$\angle PKL = 90° - 50°$

$= 40°$ (ans)

Ans: 40°

20 In the figure below, QRS is a triangle. $\angle QSR = 10°$ and $\angle QRS = 25°$. Find $\angle SQR$.



$\angle SQR = 180° - 10° - 25°$

$= 170° - 25°$

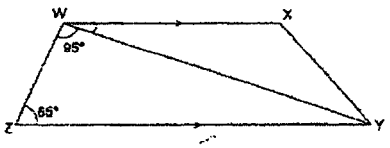
$= 145°$ (ans)

Ans: 145°

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 In the figure below, WXYZ is a trapezium. WX // ZY, $\angle ZWY = 95°$ and $\angle WZY = 65°$. Find $\angle YWX$.



$95° + 65° = 160°$

$\angle YWX = 180° - 160°$

$= 20°$ (ans)

Ans: 20°

22 Mrs Tan had some money at first. She spent $\frac{2}{3}$ of her money on a watch and $\frac{1}{5}$ of her money on food. She had $100 left. How much did she have at first?

$1 - \frac{2}{3} - \frac{1}{5} = 1 - \frac{10}{15} - \frac{3}{15}$

$= \frac{2}{15}$

$\frac{2}{15} \rightarrow \$100$

$\frac{1}{15} \rightarrow \$100 \div 2$

$= \$50$

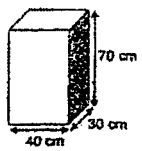
$\frac{15}{15} \rightarrow \$50 \times 15$

$= \$750$ (ans)

Ans: $750

2

23 What is the volume of the cuboid shown below?



$40 \times 30 \times 70 = 1200 \times 70$

$= 84\,000\ cm^3$ (ans)

Ans: 84 000 cm³

24 Find the average cost of the 3 items as shown below.

$36 $29.50 $42.50

Total → $36 + $29.50 + $42.50

$= \$108$

$\$108 \div 3 = \$36$ (ans)

$$\begin{array}{r} 1\ 1 \\ 36.00 \\ 29.50 \\ +\ 42.50 \\ \hline 108.00 \end{array}$$

$$\begin{array}{r} 36 \\ 3\overline{)108} \\ -9 \\ \hline 18 \\ -18 \\ \hline 0 \end{array}$$

Ans: $ 36

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25 The mass of a book is 3.08 kg. Find the total mass of 6 such books.

$$\begin{array}{r} 3.08 \\ \times\ 6 \\ \hline 18.48 \end{array}$$

$3.08 \times 6 = 18.48$ (ans)

Ans: 18.48 kg

26 The drink stall sold 2651 packet drinks in January. The number of packet drinks sold in February was 44 more than the number of packet drinks sold in January. How many packet drinks were sold in February? Round your answer to the nearest ten.

$2651 + 44 = 2695$

≈ 2700 (ans)

Ans: 2700

27 Mrs Singh deposits $15 000 in the bank for one year. The bank offers an interest of 4% per year. How much will Mrs Singh have in her bank at the end of one year?

100 % → $15 000

1 % → $15 000 ÷ 100

= $150

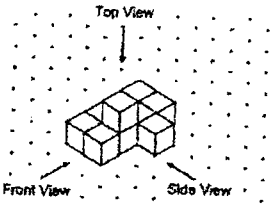
4 % → $150 × 4

= $600

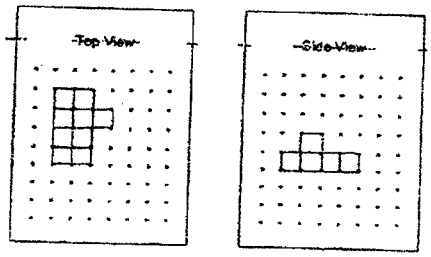
$600 + $15 000 = $15 600 (ans)

Ans: $ 15 600

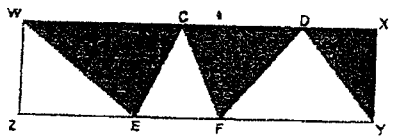
28 Nana stacked 10 unit cubes and glued them together to form the solid below.



Draw the top view and the side view of the solid on the grids below.



29 In the figure below, WXYZ is a rectangle. The area of rectangle WXYZ is 552 cm². C and D are points on WX. E and F are points on ZY. Find the total area of the shaded parts.



$$\begin{array}{r} 276 \\ 552 \\ 4 \\ \hline 15 \\ 14 \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

$552 \div 2 = 276$ (ans)

Ans: 276 cm²

30 The average mass of Mei Mei and her cousins was 45 kg. Mei Mei's mass was 53 kg. The average mass of her cousins was 43 kg. How many cousins did Mei Mei have?

$53 - 45 = 8$

$45 - 43 = 2$

$8 \div 2 = 4$ (ans)

Ans: 4

End of Paper

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PS 2022
SA 2
Paper 2

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 Sarah spent $1\frac{3}{4}$ h in the morning to complete her Science project. She spent $1\frac{7}{10}$ h in the afternoon to complete her Chinese project. What was the total amount of time she spent on completing both her Science and Chinese projects?

$1\frac{3}{4} + 1\frac{7}{10} = 2\frac{19}{20}$ (ans)

Ans: $2\frac{19}{20}$ h

2 The side of a square is $6\frac{2}{5}$ cm. What is the perimeter of the square?

$6\frac{2}{5} \times 4 = 25\frac{3}{5}$ (ans)

Ans: $25\frac{3}{5}$ cm

1

3 The table below shows the number of books sold in Evergreen bookshop from January to May.

January	February	March	April	May
88	78	82	69	71

What was the average number of books sold from January to May?

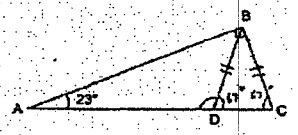
Total → 88 + 75 + 82 + 69 + 71

= 385

385 ÷ 5 = 77 (ans)

Ans: 77

4 In the figure below, ABC is a right-angled triangle. D is a point on AC. ∠BAC = 23°, ∠ABC = 90° and BC = BD. Find ∠BDA.



∠ACB = 180° − 90° − 23°

= 67°

≙ ∠BDC

∠BDA = 180° − 67°

= 113° (ans)

Ans: 113°

2

5 Junie bought a book from ABC Bookshop. She had forgotten how much she paid for the book. However, she remembered that the book cost $30 when rounded to the nearest dollar.

She remembered the following about the cost of the book:

- It showed 2 decimal places.
- All the digits are different.
- The digits she saw in the tenths and hundredths places are 1, 4 or 5.

How many possible costs of the book are there?

$29.51 ≈ $30
$29.54 ≈ $30
$30.14 ≈ $30
$30.15 ≈ $30
$30.41 ≈ $30
$30.45 ≈ $30

Ans: 6

3

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 Anna and James had the same amount of money at first. Anna bought some pens and had $4.30 left. James wanted to buy highlighters only. The number of highlighters that James wanted to buy was the same as the number of pens Anna bought. However, he was short of $8.70. Each pen cost $1.20 and each highlighter cost $2.50. How much money did Anna have at first?

$4.30 + $8.70 = $13

↳ difference between the cost of highlighters and pens

$2.50 − $1.20 = $1.30

↳ difference between 1 highlighter and 1 pen

$13 ÷ $1.30 = 10

$1.20 × 10 = $12

$12 + $4.30 = $16.30 (ans)

Ans: $16.30 (3)

4

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7 The Art Museum offers tickets on discount as shown in the flyer below.

(a) Mr Lim bought 1 ticket. How much did he pay?

100 − 10 = 90

$\frac{90}{100}$ × $18 = $14.40 (ans)

Ans: (a) $14.40 [1]

(b) Mr Tan bought 3 tickets. What was the least amount of money he paid?

100 − 20 = 80

$\frac{80}{100}$ × $18 = $13.80

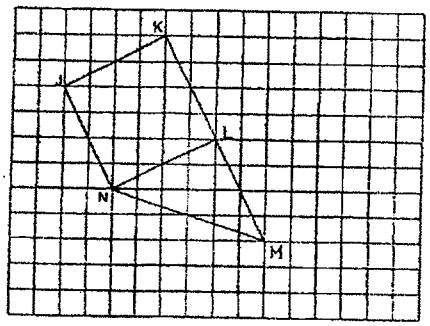
$13.80 × 3 = $39.40 (ans)

Ans: (b) $39.40 [2]

8 In the square grid below, JK and JN are straight lines.

(a) JK and JN form two sides of a square JKLN. Complete the drawing of the square JKLN. [1]

(b) JK and JN form two sides of a trapezium JKMN. KM is parallel to JN. Complete the drawing of trapezium JKMN such that the area of JKMN is $1\frac{1}{2}$ times of the area of JKLN. [2]



9 Chin Lee is 12 years older than Ming Shi. In 5 years' time, the ratio of Ming Shi's age to Chin Lee's age will be 5 : 9. How old is Chin Lee now?

9 − 5 = 4

4 units = 12

1 unit = 12 ÷ 4
= 3

9 units = 3 × 9
= 27

27 − 5 = 22 (ans)

Ans: 22 [3]

10 The average of 8 numbers is 45. When 2 of the numbers are removed, the average of the remaining numbers is 32. The difference between the 2 numbers that are removed is 8

(a) Find the sum of the remaining numbers.

8 − 2 = 6

32 × 6 = 192 (ans)

Ans. (a) 192 [1]

(b) What are the 2 numbers that are removed?

45 × 8 = 360

360 − 192 = 168 → sum of the 2 numbers removed

168 − 6 = 162

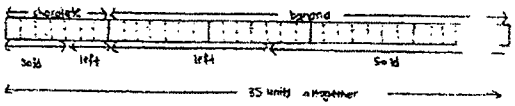
162 ÷ 2 = 81 (ans)

81 + 6 = 87 (ans)

Ans. (b) 81 , 87 [2]

11 Farnana baked some cupcakes. $\frac{1}{5}$ of the cupcakes were chocolate cupcakes and the rest were banana cupcakes. She sold $\frac{4}{7}$ of the chocolate cupcakes and 51 banana cupcakes. She then had $\frac{2}{5}$ of the cupcakes left.

(a) How many chocolate cupcakes did she sell?



$\frac{2}{5} = \frac{14}{35}$ → total left

14 − 3 = 11 → bananas left

7 × 4 = 28

28 − 11 = 17

17 units = 51

1 unit = 51 ÷ 17
= 3

4 units = 3 × 4
= 12 (ans)

Ans: (a) 12 [2]

(b) How many cupcakes did she bake in all?

7 × 5 = 35

35 units = 3 × 35
= 105 (ans)

Ans: (b) 105 [2]

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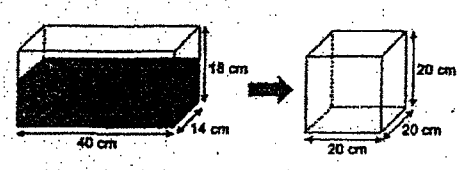
12 A tank measuring 40 cm by 14 cm by 18 cm was $\frac{3}{4}$ filled with water as shown below. All the water in the tank was poured into a cubical container of sides 20 cm.



(a) How much water was in the tank at first?

$\frac{3}{4} \times 40 \times 14 \times 18 = 7560\ cm^3$ (ans)

Ans: (a) 7560 cm^3 [2]

(b) How many more litres of water are needed to fill the cubical container to the brim?

$20 \times 20 \times 20 = 8000$

$8000 - 7560 = 440$

$440\ cm^3 = 0.44\ \ell$ (ans)

(b) 0.44 ℓ [2]

9

13 Koan Yew had 7200 shuttlecocks. He packed the shuttlecocks into as many bags of 7 shuttlecocks as possible and had some shuttlecocks left unpacked. He sold all his shuttlecocks and received $3608. Each bag of shuttlecocks was sold at $3.50.

(a) How many shuttlecocks were left unpacked?

$7200 \div 7 = 1028\ R\ 4$

Ans: (a) 4 [1]

(b) Each of the shuttlecocks left unpacked was sold at the same price. How much did each of the shuttlecocks left unpacked was sold at?

$1028 \times \$3.50 = \$3598$

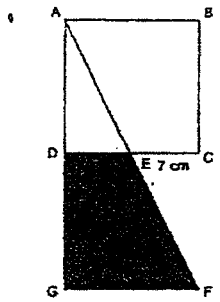
$\$3608 - \$3598 = \$10$

$\$10 \div 4 = \$2.50$ (ans)

Ans: (b) $2.50 [3]

10

14 The figure below shows a right-angled triangle AFG and a square ABCD overlapping each other. ADG is a straight line. $\angle AGF = 90°$, DC = GF and EC = 7 cm. The length of AB is twice the length of EC. Triangle AFG has the same area as square ABCD.



(a) What is the area of square ABCD?

$7 \times 2 = 14$

$14 \times 14 = 196\ cm^2$ (ans)

Ans: (a) 196 cm^2 [2]

(b) Find the shaded area DEFG.

Area of $\triangle ADE = \frac{1}{2} \times 7 \times 14$

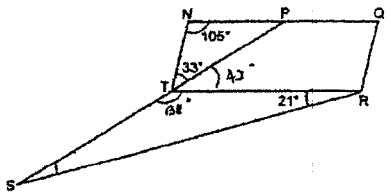
$= 49$

$196 - 49 = 147\ cm^2$ (ans)

Ans: (b) 147 cm^2 [2]

11

15 In the figure below, NQRT is a parallelogram. P is a point on NQ and PTS is a straight line. $\angle NTP = 33°$, $\angle PNT = 105°$ and $\angle TRS = 21°$.



(a) Find $\angle RST$.

$\angle PTR = 180° - 105° - 33°$

$= 42°$

$\angle STR = 180° - 42°$

$= 138°$

$\angle RST = 180° - 138° - 21°$

$= 21°$ (ans)

Ans: (a) 21° [3]

(b) Circle the words that describe triangle RTS correctly in the following statement.

Triangle RTS ((is) / is not) an isosceles triangle because RT ((is) / is not) equal to ST.

[1]

12

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18 Cindy had a piece of ribbon. She used $\frac{2}{7}$ of the ribbon to make 15 small identical bows and 7 large identical bows. The length of ribbon used for 3 large bows was the same as the length of ribbon used for 5 small bows.

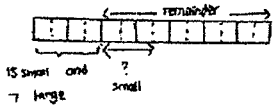
(a) How many large bows can she make with the same length of ribbon used for 15 small bows?

$15 \div 5 = 3$

$3 \times 3 = 9$ (ans)

Ans: (a) 9 [1]

(b) How many small bows can she make with $\frac{3}{10}$ of the remaining ribbon?



$\frac{2}{7} = \frac{4}{14}$ → 15 small + 7 large

→ 9 large + 7 large

→ 16 large

$\frac{1}{14}$ → $16 \div 4$

$= 4$

$\frac{3}{14}$ → 4×3

$= 12$ large

→ $(\frac{12}{3} \times 5)$ small

→ 20 small (ans)

Ans: (b) 20 [4]

17 Hon Lee formed some figures using squares and circles as shown below.

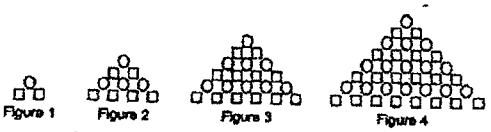


Figure	1	2	3	4
Number of circles	1 $1\times1=1$	4 $2\times2=4$	9 $3\times3=9$	16 $4\times4=16$
Number of squares	2 2×1	6 3×2	12 4×3	20 5×4
Total number of circles and squares	3	10	21	36

(a) Find the number of circles in Figure 8.

$8 \times 8 = 64$ (ans)

Ans: (a) 64 [1]

14

17 (b) Which figure in the pattern has 930 squares?

$30 \times 31 = 930$

(ans)

(b) Figure 30 [2]

(c) Find the total number of circles and squares in Figure 15.

circle → $15 \times 15 = 225$

squares → $15 \times 16 = 240$

Total → $225 + 240 = 465$ (ans)

(c) 465 [2]

End of Paper

END

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