CATHOLIC HIGH SCHOOL

MID-YEAR EXAMINATION (2019)

PRIMARY SIX

MATHEMATICS

PAPER 1

(BOOKLET A)

Name : _____ ( )

Class : Primary 6 _____

Date : 14 May 2019

Total Time for Booklets A and B: 1 hour

15 questions

20 marks

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Shade your answers in the Optical Answer Sheet (OAS) provided.

The use of calculators is **NOT** allowed.

Booklet A and B consist of 14 printed pages excluding the cover page.

Questions **1** to **10** carry 1 mark each. Questions **11** to **15** carry 2 marks each. For each question, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet. All diagrams are not drawn to scale. (20 marks)

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1. Which one of the following number is the largest?

   (1) 0.5

   (2) 0.05

   (3) 0.35

   (4) 0.305

---

2. Express 3070 cm in m.

   (1) 3.7 m

   (2) 3.07 m

   (3) 30.7 m

   (4) 30.07 m

---

3. A number of tourists visited the amusement park last year. This number when rounded to the nearest thousand was 450 000. Which of the following was the actual number?

   (1) 450 739

   (2) 450 079

   (3) 449 379

   (4) 449 079

---

4. Ignatius paid $10 for 200 sweets. How much did each sweet cost?

   (1) 5¢

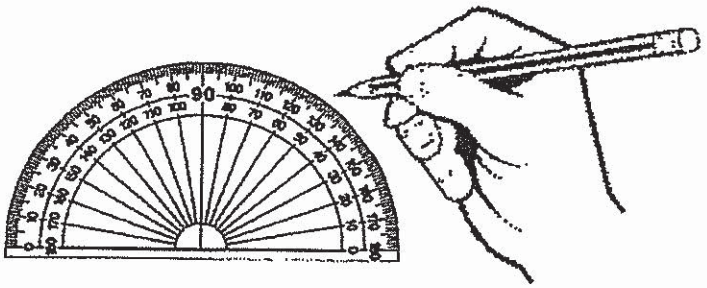
   (2) 2¢

   (3) 50¢

   (4) 20¢

(Go on to the next page)

5. Which of the following is likely the mass of a protractor?



(1) 20 kg

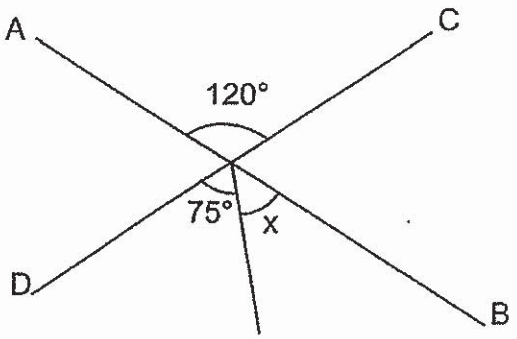
(2) 2 kg

(3) 0.2 kg

(4) 0.02 kg

---

6. AB and CD are straight lines. Find $\angle x$.



(1) 15°

(2) 30°

(3) 45°

(4) 55°

(Go on to the next page)

7. Which of the following is closest to 1?

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

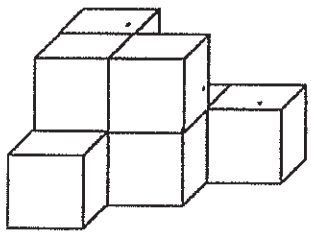
(2) $\frac{5}{6}$

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

(4) $1\frac{2}{7}$

---

8. How many unit cubes formed the solid shown below?



(1) 6

(2) 7

(3) 8

(4) 9

---

9. The length of a rectangle is thrice its breadth. Its perimeter is 288 cm. What is the breadth of the rectangle?

(1) 36 cm

(2) 72 cm

(3) 96 cm

(4) 108 cm

(Go on to the next page)

10. Dave bought 60 red balloons and 90 blue balloons for a carnival. 15 balloons of each colour burst. What percentage of the balloons burst?

(1) 10%

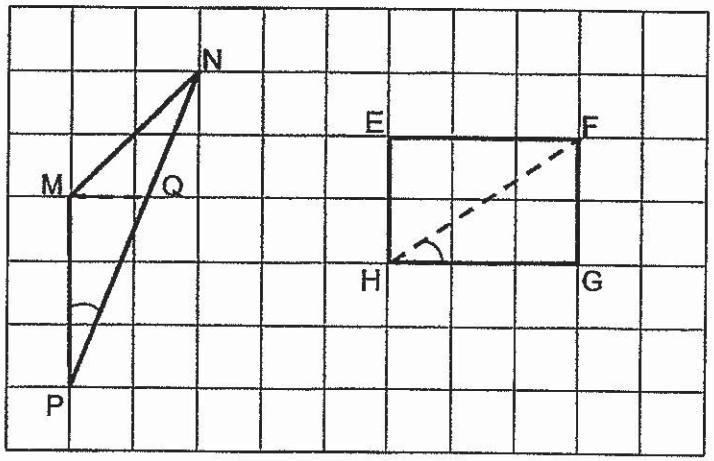
(2) 20%

(3) 30%

(4) 80%

---

11. Triangle MNP and rectangle EFGH are shown in the square grid below.



Based on what is shown in the square grid, which of the following statement(s) is/are true?

Statement A : $\angle MPN$ is smaller than $\angle FHG$.

Statement B : Area of triangle MNP is smaller than the area of rectangle EFGH.

Statement C : Line MQ and Line HF divide the triangle and the rectangle equally into halves respectively.

(1) A only

(2) C only

(3) A and B only

(4) B and C only

---

12. A drawer contains red, blue and green papers. $\frac{1}{4}$ of the papers are red. $\frac{2}{9}$ of the remaining papers are blue and the rest are green papers. What fraction of the papers in the drawer are green?

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

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

(3) $\frac{10}{13}$

(4) $\frac{19}{36}$

---

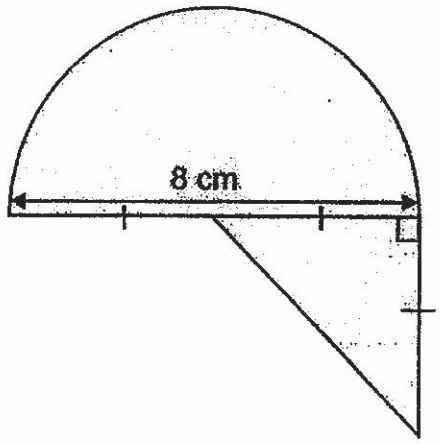
13. Arrange these volumes from the smallest to the largest.

1.25 ℓ	$1\frac{2}{5}$ ℓ	1 ℓ 205 ml

	Smallest				Largest
(1)	1 ℓ 205 ml	,	1.25 ℓ	,	$1\frac{2}{5}$ ℓ
(2)	1 ℓ 205 ml	,	$1\frac{2}{5}$ ℓ	,	1.25 ℓ
(3)	$1\frac{2}{5}$ ℓ	,	1.25 ℓ	,	1 ℓ 205 ml
(4)	1.25 ℓ	,	$1\frac{2}{5}$ ℓ	,	1 ℓ 205 ml

(Go on to the next page)

14. The shaded figure shows a semicircle of diameter 8 cm and a right-angled triangle. What is the area of the shaded figure?
Leave the answer in terms of π.



(1) $(4\pi + 8)$ cm^2

(2) $(8\pi + 8)$ cm^2

(3) $(16\pi + 8)$ cm^2

(4) $(32\pi + 8)$ cm^2

---

15. Jack bought $\frac{4}{5}$ m of ribbon. He cut the greatest possible pieces of $\frac{1}{7}$ m each from the ribbon. What was the length of the ribbon left over?

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

(2) $\frac{3}{5}$ m

(3) $\frac{3}{35}$ m

(4) $\frac{23}{35}$ m

END OF BOOKLET A

CATHOLIC HIGH SCHOOL

MID-YEAR EXAMINATION (2019)

PRIMARY SIX

MATHEMATICS

PAPER 1

(BOOKLET B)

Name : _____ ( )

Class : Primary 6 _____

Date : 14 May 2019

Total Time for Booklets A and B: 1 hour

15 questions

25 marks

Booklet A	
Booklet B	
Total	

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Write your answers in this booklet.

The use of calculators is **NOT** allowed.

Booklet A and B consist of 14 printed pages excluding the cover page.

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. All diagrams are not drawn to scale. (5 marks)

Do not write in this space

16. Write one million and ten in numerals.

Ans: _____

17. Find the value of $42 - 18 \div 3 + (52 - 21)$

Ans: _____

18. Write down one decimal between 3 and 3.1

Ans: _____

(Go on to the next page)

19. Write down all the common factors of 18 and 24.

Do not write In this space

Ans: _____

20. The average of 5 consecutive number is 35. What is the smallest possible whole number?

Ans: _____

Total marks for questions 16 to 20

5

(Go on to the next page)

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. All diagrams are not drawn to scale.

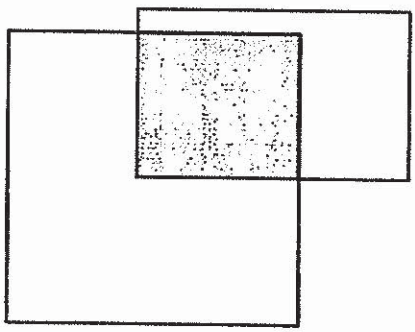
(20 marks)

Do not write in this space

21. Find the value of $3 \div 7$, correct to 2 decimal places.

Ans: _____

22. The figure below is made up of a square and a rectangle overlapping each other. The ratio of the shaded area to the area of the square is 2 : 5. The ratio of the shaded area to the area of the rectangle is 4 : 7. What is the ratio of the area of the square to that of the rectangle?



Ans: _____

(Go on to the next page)

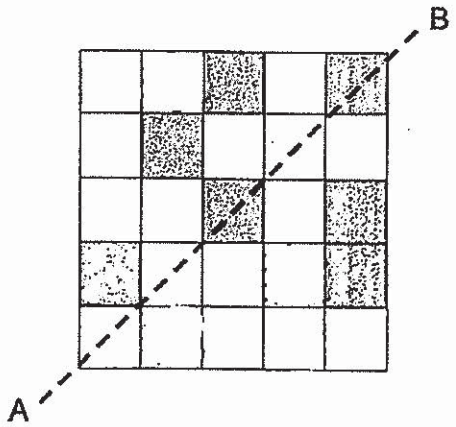
23. Three friends went shopping and spent some money. Muthu spent $n, James spent $16n and Peijun spent $(16 + n).

Do not write in this space

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
(a)	Muthu spent the least amount of money.			
(b)	James spent more than Peijun.			

24. There are 7 shaded squares in the figure. Shade 3 more squares to form a symmetric figure with AB as the line of symmetry.



(Go on to the next page)

25. There were some adults and children at a party. For every 3 adults, there were 11 children. There were 32 more children than adults. How many adults were at the party?

Do not write in this space

Ans: _____

26. Russell had thirty 20¢ and 10¢ coins. He exchanged all the 10¢ coins for 20¢ coins and had a total of eighteen 20¢ coins after the exchange. How many 10¢ coins did he have at first?

Ans: _____

(Go on to the next page)

27. Judy bought a teddy bear that cost $50 before GST. There was a 7% GST on the teddy bear. How much did Judy pay for the teddy bear?

Do not write in this space

Ans:$ _____

28. The table shows the charges for a car rental.

First 2 hours	$20
Every additional hour	$12

Mr Lee paid $116 for a car rental. How many hours of rental did he pay for?

Ans: _____ h

(Go on to the next page)

29. Four identical rectangular boxes can be placed differently inside a container with a height of 40 cm. Figure A and Figure B shows two arrangements. The arrangement in Figure A leaves a gap of 20 cm wide.

Do not write in this space

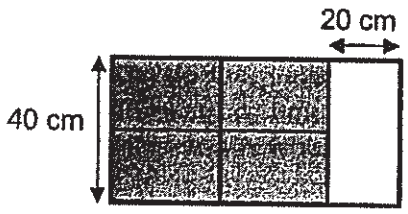


Figure A

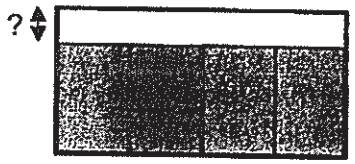


Figure B

What is the height of the gap in Figure B?

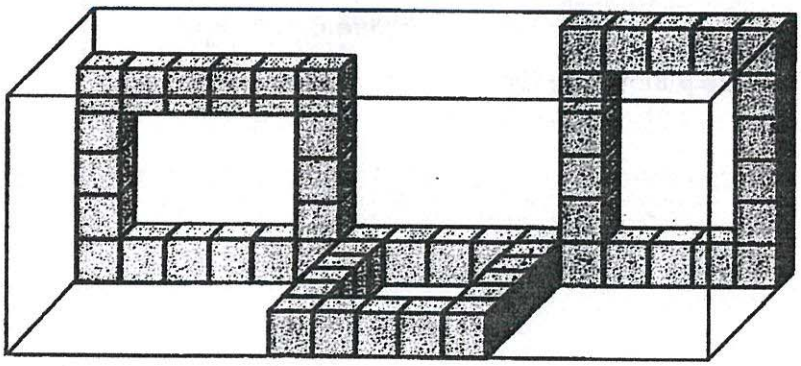
Ans: _____ cm

(Go on to the next page)

30. Jonas glued eighteen unit cubes to form the solid shown.

Do not write in this space

He put three such solids into an empty rectangular glass box as shown below. He then continued to put in as many as possible without any part of the solids being outside the box. How many unit cubes did he use altogether?



Ans: _____

Total marks for questions 21 to 30

20

END OF BOOKLET B
END OF PAPER 1

CATHOLIC HIGH SCHOOL

MID-YEAR EXAMINATION (2019)

PRIMARY SIX

MATHEMATICS

PAPER 2

Name : _____( )

Class : Primary 6 _____

Date : 14 May 2019

Total Time: 1 h 30 min

17 questions

55 marks

Parent's Signature: _____

Paper 1 Booklet A	20
Paper 1 Booklet B	25
Paper 2	55
Total Marks	100

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Write your answers in this booklet.

The use of an approved calculator is expected, where appropriate.

This booklet consists of 15 printed pages excluding the cover page.

Questions 1 to 5 carry 2 marks each. Show your working clearly in the space below each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated.
All diagrams are not drawn to scale. (10 marks)

Do not write in this space

1. George packed y muffins into boxes of 6 with no remainder. He gave half of the number of boxes to his friends. How many boxes of muffins did he give his friends? Express your answer in terms of y.

Ans: _____

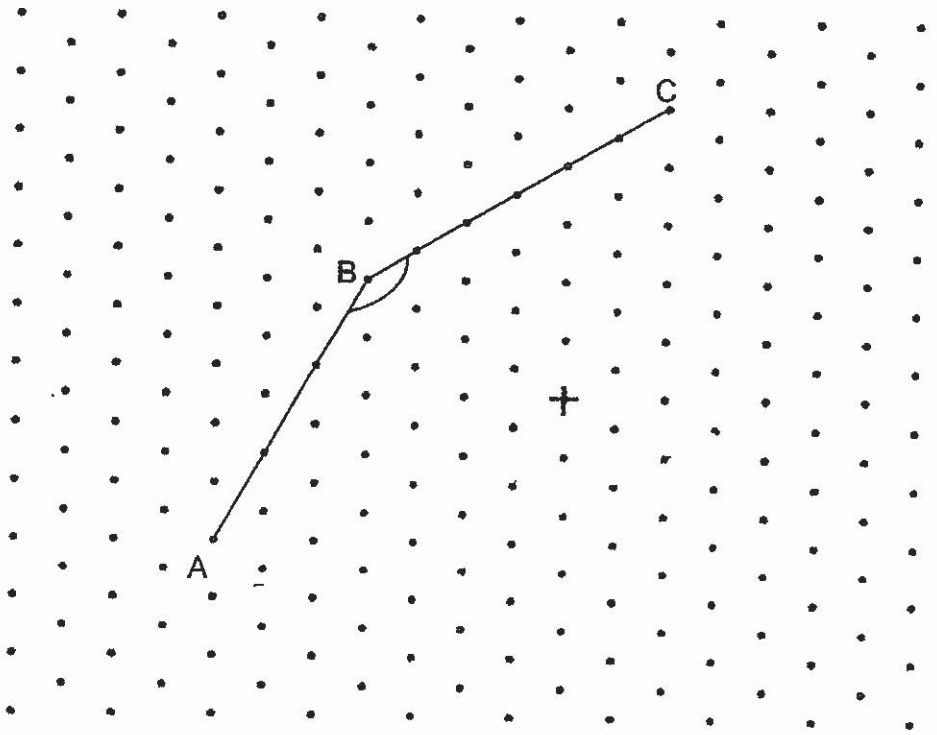
2. For the first 3 days of a week, James spent an average of $21 per day. He did not spend any money for the next 4 days. What was his average expenditure for that week?

Ans:$ _____

3. (a) Measure and write down the size of the ∠ABC as shown in the grid below.

Do not write in this space

(b) In the grid, draw a line that is parallel to AB and passing through point +.



Ans:(a) _____ °

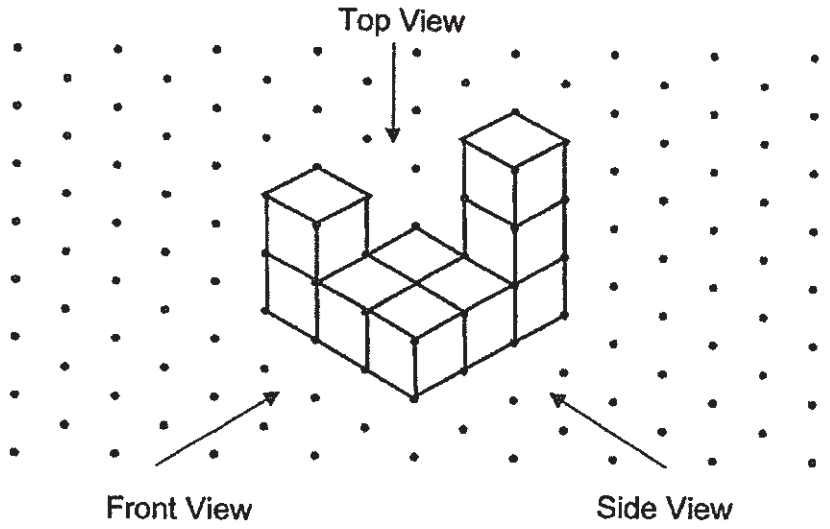
4. Ivan left his house for a cinema at 11 15 for a movie. He took 35 min to reach the cinema. The movie lasted 1h 45 min. What time did the movie end? Express your answer in the 24-hour clock.

Ans: _____

(Go on to the next page)

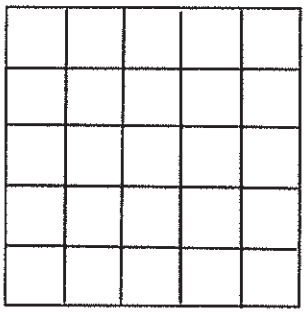
5. 9 unit cubes are stacked to form the solid below.

Do not write in this space

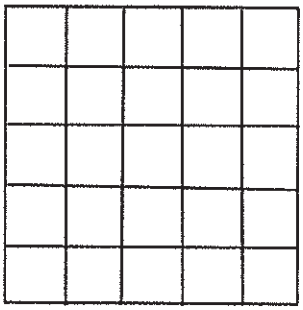


Draw the top view and the side view of the solid on the grids below.

Top View



Side View



(Go on to the next page)

For questions **6** to **17**, show your working clearly in the space provided for each question 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)

Do not write in this space

6. Daniel had 104 more straws than Harley at first. After Harley gave 18 straws to Daniel, Daniel had thrice as many straws as Harley. How many straws did Harley have at first?

Ans: _____ [3]

(Go on to the next page)

7. Julian started reading a book with 348 pages. He read 6 pages on each day from Monday to Friday and 11 pages on each day on Saturday and Sunday. He started reading on a Thursday. On which day of the week did he finish reading the book?

Do not write in this space

Ans:_____ [3]

8. Three identical trapeziums were each drawn in the square grid below. Nigel cut each trapezium into different number and type of triangles:

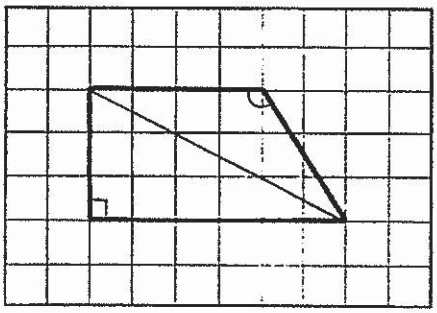
(a) an obtuse-angled triangle and a right-angled triangle

(b) three right-angled triangles

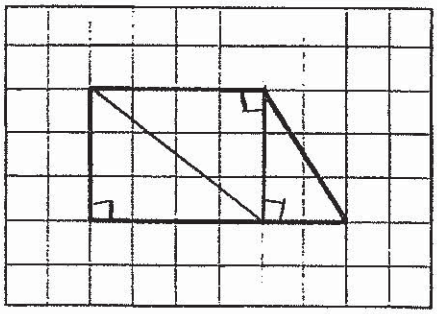
(c) two isosceles triangles and a right-angled triangle

Draw line(s) on each trapezium to show where Nigel had cut to obtain the required number and type of triangles.

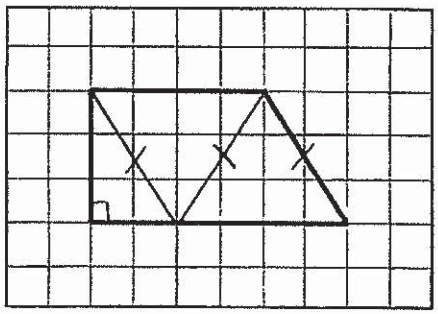
Do not write in this space



(a) an obtuse-angled triangle and a right-angled triangle



(b) three right-angled triangles

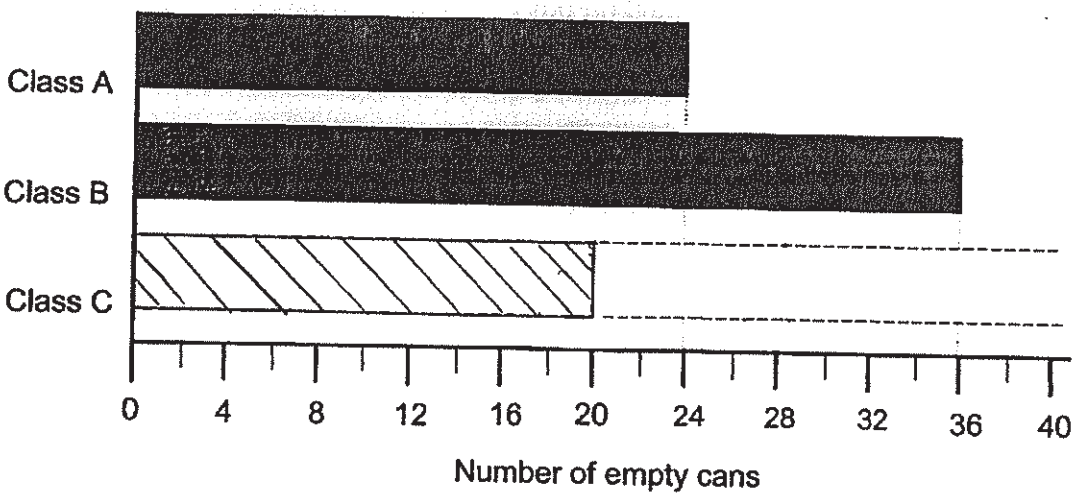


(c) two isosceles triangles and a right-angled triangle

[3]

9. The graph below shows the number of empty cans collected by classes A, B and C for a recycling project. Class A collected the least number of empty cans.

Do not write in this space



(a) What fraction of the number of empty cans collected by Class A is collected by Class B? Give your answer in the simplest form.

(b) The difference in the number of empty cans collected between Class A and Class C is $\frac{1}{9}$ of what Class B had collected.
Draw the bar for Class C in the graph. [2]

Ans: (a) _____ [1]

(Go on to the next page)

10. In a bakery, buns were sold only in packets. A packet of small buns cost $3.90 and a packet of big buns cost $4.50. Frank bought twice as many packets of small buns as big buns. He spent $110.70 altogether. How many packets of big buns did he buy?

Do not write in this space

Ans: _____ [3]

11. Donald and Mickey had a total of 468 sweets. Donald gave $\frac{1}{4}$ of his sweets to Mickey. Mickey then gave $\frac{1}{3}$ of his sweets to Donald. In the end, each of them had the same number of sweets. How many sweets did Donald have at first?

Do not write in this space

Ans: _____ [4]

(Go on to the next page)

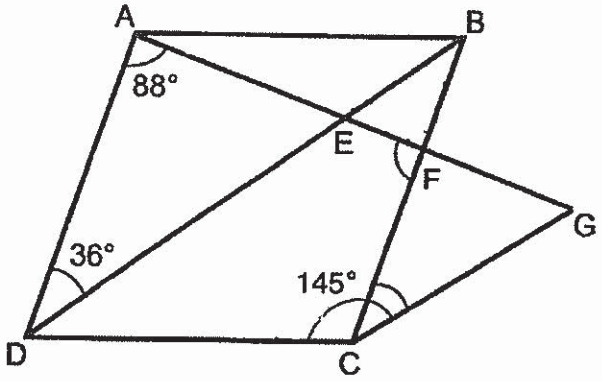
12. Richard bought $\frac{3}{4}$ as many apples as oranges. After giving away 15 apples and 26 oranges, he had $\frac{2}{3}$ as many oranges as apples. How many fruits did Richard buy altogether?

Do not write in this space

Ans: _____ [4]

13. In the figure, ABCD is a rhombus. DEB, AEFG and CG are straight lines. $\angle ADB = 36°$, $\angle DCG = 145°$ and $\angle DAE = 88°$.

Do not write in this space



(a) Find $\angle BCG$.

(b) Find $\angle CFA$.

Ans (a) _____ [3]

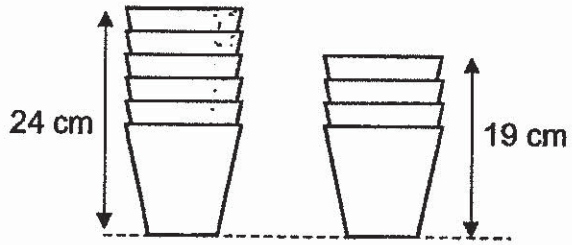
(b) _____ [2]

(Go on to the next page)

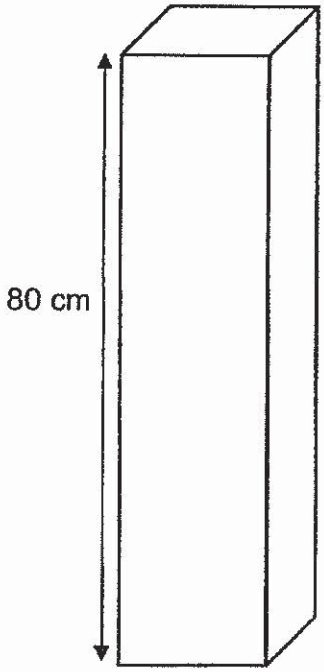
14. The figure shows two stacks of identical plastic cups. There are 4 plastic cups in the shorter stack and 6 plastic cups in the taller stack.

Do not write in this space

The height of the shorter stack is 19 cm and the taller stack is 24 cm.



Francis wants to pack the plastic cups as a single stack into a box of height 80 cm tall. What is the most number of plastic cups he can pack into the box?



Ans: _____ [4]

(Go on to the next page)

15. The number of visitors to a museum was 3315 on Tuesday. This was a 15% decrease from the number on Monday. The number of people who visited the museum on Wednesday was a 20% increase from the number on Tuesday.

Do not write in this space

(a) What was the total number of people who visited the museum on Monday?

(b) What was the percentage increase in the number of people who visited the museum on Wednesday compared to Monday?

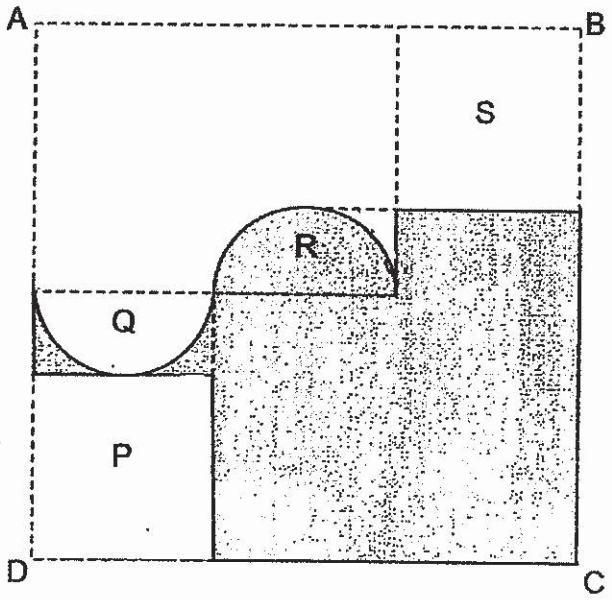
Ans: (a) _____ [2]

(b) _____ [3]

(Go on to the next page)

16. In the figure below, two identical squares, P and S, and two identical semicircles, Q and R, lie within a large square ABCD. The area of the large square ABCD is 324 cm^2.

Do not write in this space



(a) What is the radius of the semicircle?

(b) Find the perimeter of the shaded area. Take $\pi = 3.14$.

Ans: (a) _____ [2]

(b) _____ [2]

(Go on to the next page)

17. Lines of the same length and dots of the same size are used to form figures that follow a pattern. The first four figures are shown below.

Do not write in this space

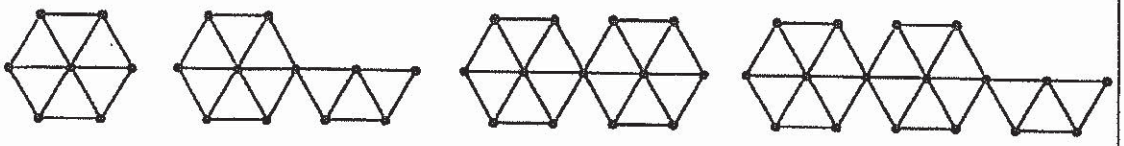


Figure 1 Figure 2 Figure 3 Figure 4

The table below shows the number of lines and dots used for each figure.

Figure Number	Number of lines used	Number of dots used
1	12	7
2	19	11
3	24	13
4	31	17
5		

[1]

(a) Complete the table for figure 5.

(b) Seventy-two lines are used for one of the figures.
What is its figure number?

Ans: (b) _____ [3]

END OF PAPER 2

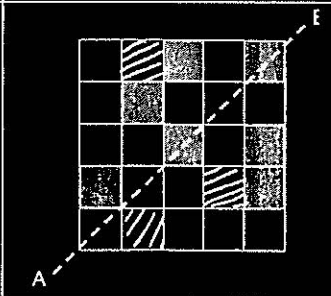
ANSWER KEY

YEAR : 2019
LEVEL : PRIMARY 6
SCHOOL : CATHOLIC HIGH SCHOOL
SUBJECT : MATHEMATICS
TERM : SA1

SECTION A

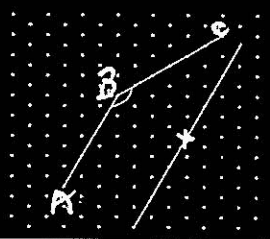
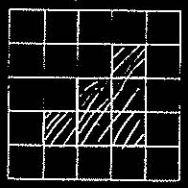
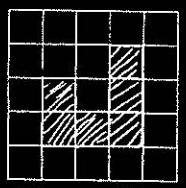
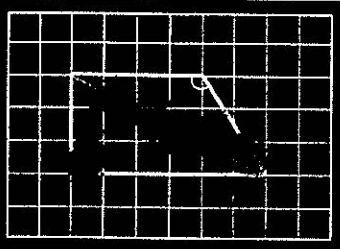
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
1	3	2	1	4	3	2	4
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
1	2	3	2	1	2	3	

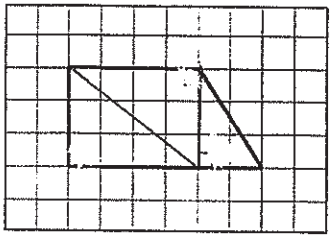
SECTION B

Q16	1 000 010
Q17	42 – 18 ÷ 3 + (52 – 21) = 42 – 6 + 31 = 67
Q18	3.01 ~ 3.09
Q19	1 , 2 , 3 , 6
Q20	33
Q21	3 ÷ 7 = 0.428 ≈ 0.43
Q22	A : S <> A : R 2 : 5 <> 4 : 7 4 : 10 <> 4 : 7 Ans → 10 : 7
Q23	(a) True (b) Not possible to tell
Q24	
Q25	11 – 3 = 8 32 ÷ 8 = 4 4 x 3 = 12
Q26	10cents in the end → 30 – 18 = 12 10cents at first → 12 x 2 = 24
Q27	$\frac{107}{100} \times \frac{50}{1} = \frac{535}{10}$ = $53.50
Q28	116 – 20 = 96 96 ÷ 12 = 8 8 + 2 = 10 hours

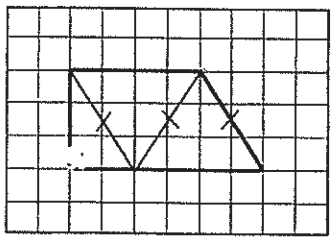
Q29	40 x 20 = 800 800 ÷ 80 = 10
Q30	6 + 6 + 6 + 1 = 19 19 x 18 = 342 units cubes

SECTION C

Q1	$y \div 6 = \frac{y}{6}$ $\frac{y}{6} \div 2 = \frac{y}{12}$
Q2	21 x 3 = $63 63 ÷ 7 = $9
Q3	(a) 150° (b) 
Q4	11 15 01 45 00 35 12 95 = 1335
Q5	Top View  Side View 
Q6	After gave → D : H → 1 : 3 2u → 104 + 18 +18 = 140 140 ÷ 2 = 70 Ans →70 + 18 = 88
Q7	Total read (week) → 11 x 2 + 6 x 5 = 52 Start on Thursday → 6 x 2 + 11 x 2 = 34 348 – 34 = 314 314 ÷ 52 = 6 R 2 Answer → Monday (Julian can finish 2 pages in one weekday.)
Q8	 (a) an obtuse-angled triangle and a right-angled triangle



(b) three right-angled triangles



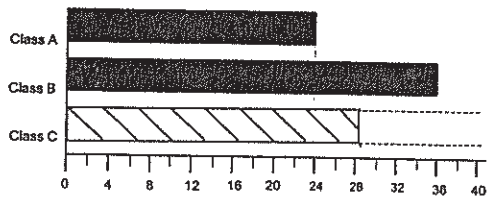
(c) two isosceles triangles and a right-angled triangle

Q9

(a) $\frac{36}{24} = \frac{3}{2}$

(b) 36 ÷ 9 = 4

24 + 4 = 28



Q10

3.90 x 2 + 4.50 = 12.30

110.40 ÷ 12.30 = 9 packets of big buns

Q11

468 ÷ 2 = 234

234 ÷ 2 = 117 (Total sweet Mickey give to Donald)

117 ÷ 3 x 4 = 156

Q12

Apple	Orange
3u	4u
3u – 15	4u – 26
3p	2p

1p = (3u – 15) ÷ 3 = u – 5

1p = (4u – 26) ÷ 2 = 2u – 13

2u – u = 13 – 5

u = 8

7 x 8 = 56

Q13

(a) <ADB = <BDC = 36

<BCD = 180 – (36 x 2) = 108

<BCG = 145 – <BCD

<BCG = 145 – 108 = 37

(b) <DAG = <AFB = 88

<CFA = 180 – <AFB

<CFA = 180 – 88 = 92

Q14	**24 – 19 = 5** **5 ÷ 2 = 2.5** **2.5 x 5 = 12.5** **24 – 12.5 = 11.5** **80 – 11.5 = 68.5** **68.5 ÷ 2.5 = 27** **27 + 1 = 28**
Q15 (a)	$\frac{100}{85} \times \frac{3315}{1} = 3900$ **∴3900 people visited on Monday.**
Q15 (b)	$\frac{120}{100} \times \frac{3315}{1} = 3978$ $3978 - 3900 = 78$ $\frac{78}{3900} \times \frac{100}{1} = 2$ **∴ 2% increased.**
Q16	**(a)** $\sqrt{324}$ **= 18** **18 ÷ 3 = 6** **6 ÷ 2 = 3** **(b)** $\frac{1}{2} \times \pi \times 6 = 9.42$ **9.42 + 9.42 + 12 + 12 + 6 + 6 + 3 + 3 + 6** **= 66.84cm**
Q17	**(a) Line → 36** **Dots → 19** **(b) 7 + 5 = 12** **72 – 12 = 60** **60 ÷ 12 = 5** **5 x 2 = 10** **10 + 1 = 11**