Temasek Primary School

Preliminary Examination

Primary Six Standard

2019

MATHEMATICS

(PAPER 1 BOOKLET A)

Name: _____ (   ) Class: 6 (   )

Date : 21 August 2019

Total Time for Booklets A and B : 1 hour

INSTRUCTIONS TO CANDIDATES

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 on the Optical Answer Sheet (OAS) provided.
5. You are not allowed to use a calculator.
6. This booklet consists of 8 printed pages.

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 the correct oval in the Optical Answer Sheet.

(20 marks)

1. What is the value of the digit '3' in 5 302 694?

    (1) 300

    (2) 3000

    (3) 30 000
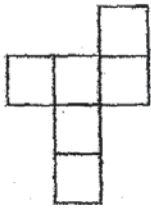
    (4) 300 000

2. Express 68% as a fraction in its simplest form.

    (1) $\dfrac{16}{25}$

    (2) $\dfrac{17}{25}$

    (3) $\dfrac{17}{20}$

    (4) $\dfrac{34}{50}$
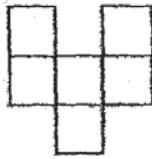
3. Evaluate: $12y + 4y - 8 - 6y + 11$

    (1) $10y + 3$

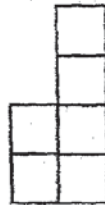   (2) $10y - 19$

    (3) $22y + 3$

    (4) $22y - 19$
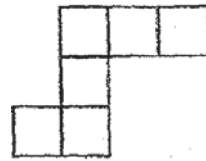
4. Which one of the following is the net of a cube?

(1)	(2)	(3)	(4)

5. 3.45 x 100 = [   ] - 100

What is the missing number in the box?

(1) 245

(2) 345

(3) 355

(4) 445

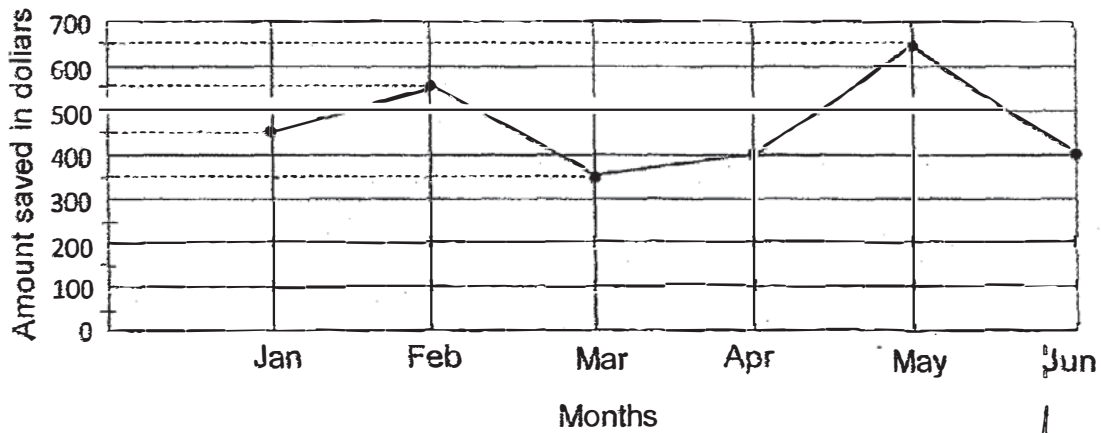6. Which one of the following is greater than $\frac{1}{2}$?

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

(2) $\frac{7}{15}$

(3) $\frac{9}{17}$

(4) $\frac{6}{16}$

The graph below shows the amount of money James saved from January to June. Study the graph and answer the following question.

Amount saved in dollars

Months

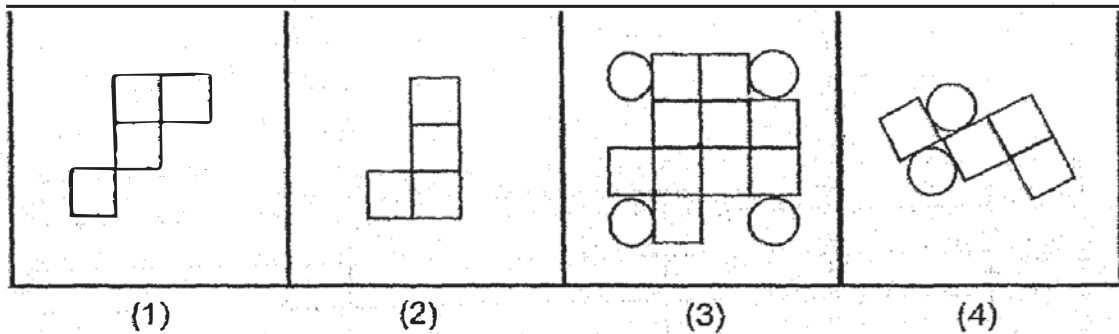7. In which month did James increase his savings by $250?

    (1) Jan

    (2) Mar

    (3) Apr

    (4) May

8. The solid below is made up of 1-cm cubes that are glued together. If the solid is painted red, what is the total surface area of the solid that is painted red?
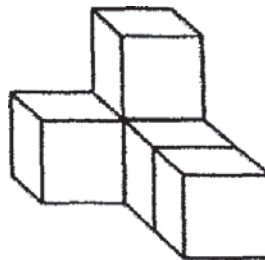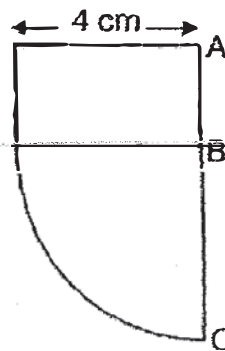

    (1) 22 cm²

    (2) 19 cm²

    (3) 16 cm²

    (4) 11 cm²

9.   Which one of the following figures is symmetrical?

(1)   (2)   (3)   (4)

10. The figure below is made up of a quadrant and a rectangle. BC is twice of AB. Find the perimeter of the figure. Leave your answer in terms of π.
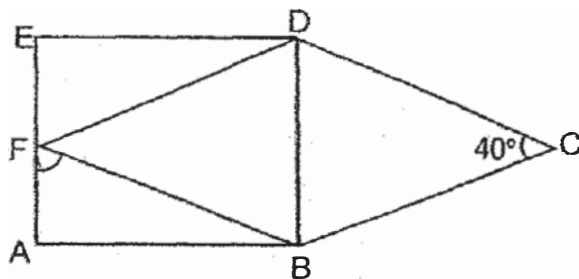
(1) $(2\pi + 8)$ cm

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

(3) $(2\pi + 12)$ cm

(4) $(8\pi + 12)$ cm

11. The total mass of Amanda and Brenda is 51 kg. The total mass of Brenda and Celeste is 81 kg. Celeste is 3 times as heavy as Amanda. What is the average mass of the three girls?

(1)   45 kg

(2)   44 kg

(3)   32 kg

(4)   30 kg

12. In the figure below is not drawn to scale. ABDE is a rectangle. BCDF is a rhombus. Find ∠AFB.

(1) 20°

(2) 40°

(3) 70°

(4) 80°

13. The figure below is made up of a quadrant, OBD, overlapping with a semi-circle. AOC is a straight line. O is the centre of the circle of radius 7 cm. Find the area of the figure if the shaded area is 17 cm². (Take $\pi = \frac{22}{7}$)
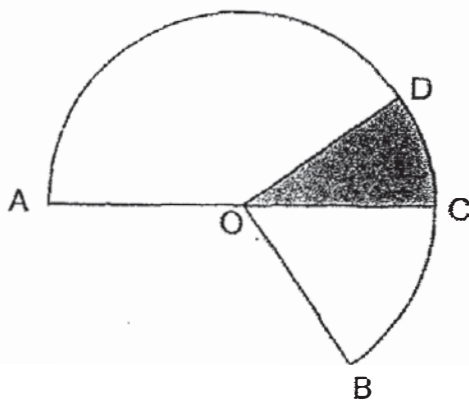
(1) 45.5 cm²

(2) 98.5 cm²

(3) 115.5 cm²

(4) 132.5 cm²

14. A piece of square paper, B, is cut off from a big piece of square paper, A, such that the length of B is $\frac{1}{2}$ the length of A. Another smaller square piece of paper, C, is cut from B such that the ratio of the length of C to the length of B is 2 : 3. What fraction of the area of A is the area of C? (Give your answer in the simplest form.)
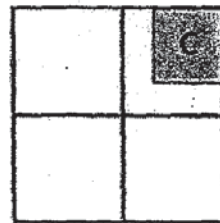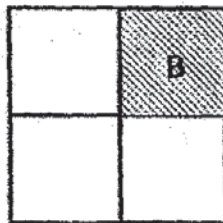
(1) $\frac{1}{3}$

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

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

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

15. The table below shows part of a series of numbers arranged in a pattern.
A black frame was used to cover exactly 4 squares on the table. The sum of the 4 numbers covered in the table below is 44.

P	0	1	2	3	4	5	6			9	10	...	
Q	7	8	9	10	11	12	13			16	...	...	

Mabel puts the black frame on 4 other squares of the table. The sum of the 4 numbers is 100. What is the largest number that is covered by the frame?

(1) 25

(2) 29

(3) 30

(4) 35

End of Booklet A

Temasek Primary School

Preliminary Examination

Primary Six Standard

2019

MATHEMATICS

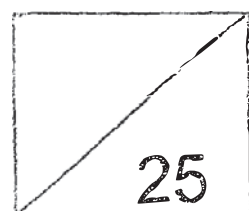(PAPER 1 BOOKLET B)

Name: _____ ( ) Class: 6 ( )

Date : 21 August 2019

Total Time for Booklets A and B : 1 hour

INSTRUCTIONS TO CANDIDATES

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. You are not allowed to use a calculator.
6. This booklet consists of 9 printed pages.

25

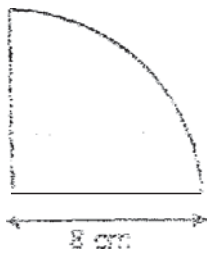Questions 16 to 20 carry 1 mark each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

(5 marks)

16. Find the value of $24 + 18 \div 3 \times 2$.

Answer: _____

17. What is the area of the figure shown below? Leave your answer in terms of π.

8 cm

Answer: _____ cm^2

18. Evaluate $\dfrac{3}{5} \div \dfrac{1}{3}$.

Answer: _____

19. 0.035 x 314 = 10.99, then

$$\boxed{} \times 314 = 1099$$

What is the missing number in the box?

Answer: _____

20. The ratio of the length to the breadth of a carpet is 3 : 2. If the length of the carpet is 6 m, find its perimeter.

Answer: _____ m

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.
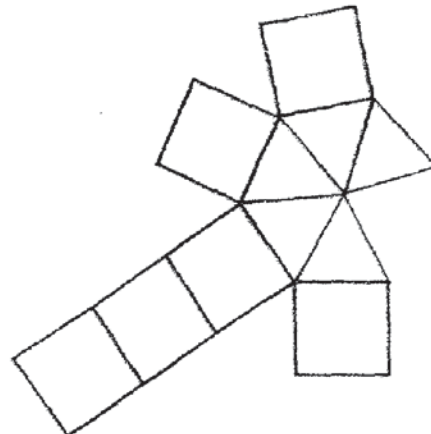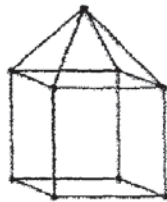
(20 marks)

21. The solid below is formed with some unit cubes which cannot be separated. What is the least number of unit cubes needed to add to the existing solid to form into a cube?
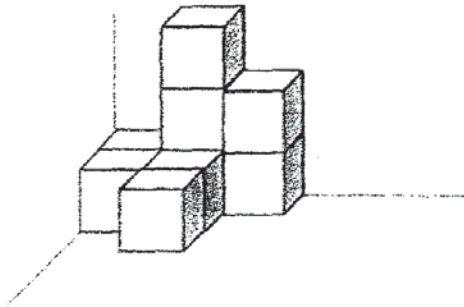
Answer: _____ unit cubes

22. In the net of the given solid, there are 2 extra faces. Identify the 2 extra faces and put a cross (X) on each of these faces.

23. Last month, Jolene gave 50% of her salary to her mother. She spent 20% of it and saved the rest. Her spending was $300 less than her savings. How much did she give to her mother?

Answer: $_____

---

24. Bananas are sold at $0.80 per 100g. If this bunch of bananas costs $3.60, find its mass.
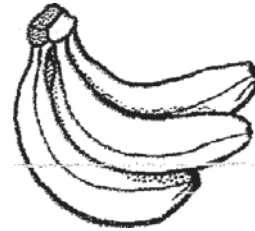
Answer: _____ g

---

25. Green Valley and Brighton Rock are 380 km apart. Mike left Green Valley for Brighton Rock at 6.00 pm. Sam left Brighton Rock for Green Valley at 6.20 pm. 3 hours after Mike left Green Valley, he met Sam.
If Sam drove at an average speed of 75 km/h at the time they met, what was the average driving speed of Mike?

Answer: _____ km/h

26. A group of children were asked to choose their favourite ice-cream flavour from 4 choices. 52 children indicated that they prefer vanilla-flavoured ice-cream. The pie chart below represents the children's choices.

The children's choices of ice-cream flavours are also represented by the bar graph below. The bar that shows the number of children who chose chocolate flavour has not been drawn. Draw this bar on the graph below.
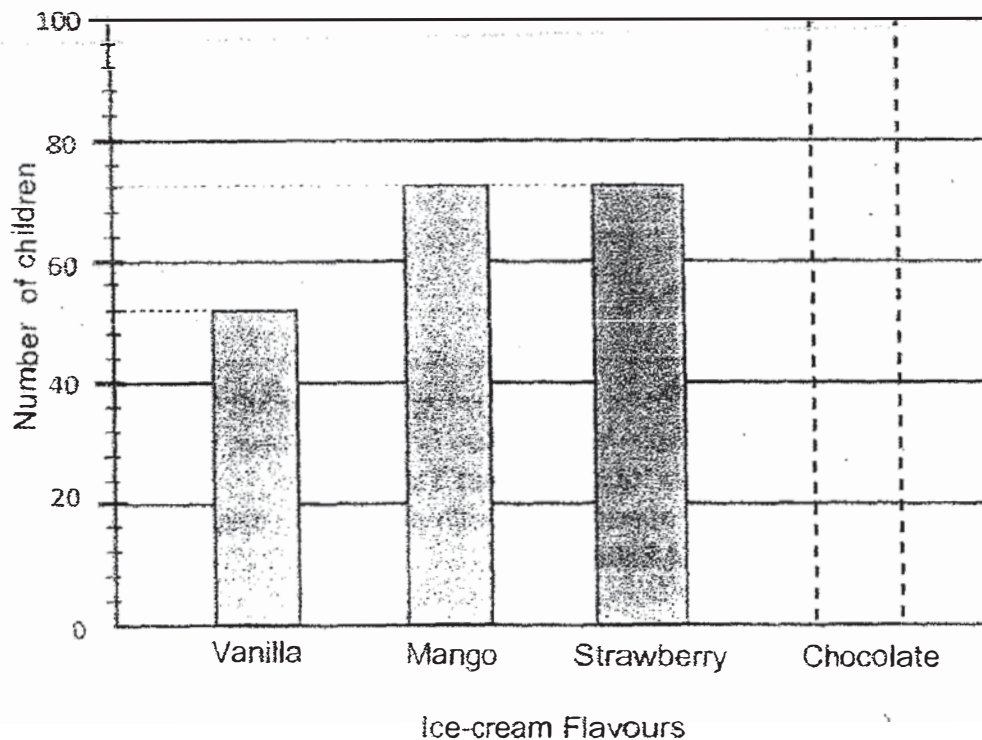
27. In the figure below, Point A is north of Point B. Point C is west of Point B and
∠BAC = 30°. Draw and label triangle ABC by completing the figure.
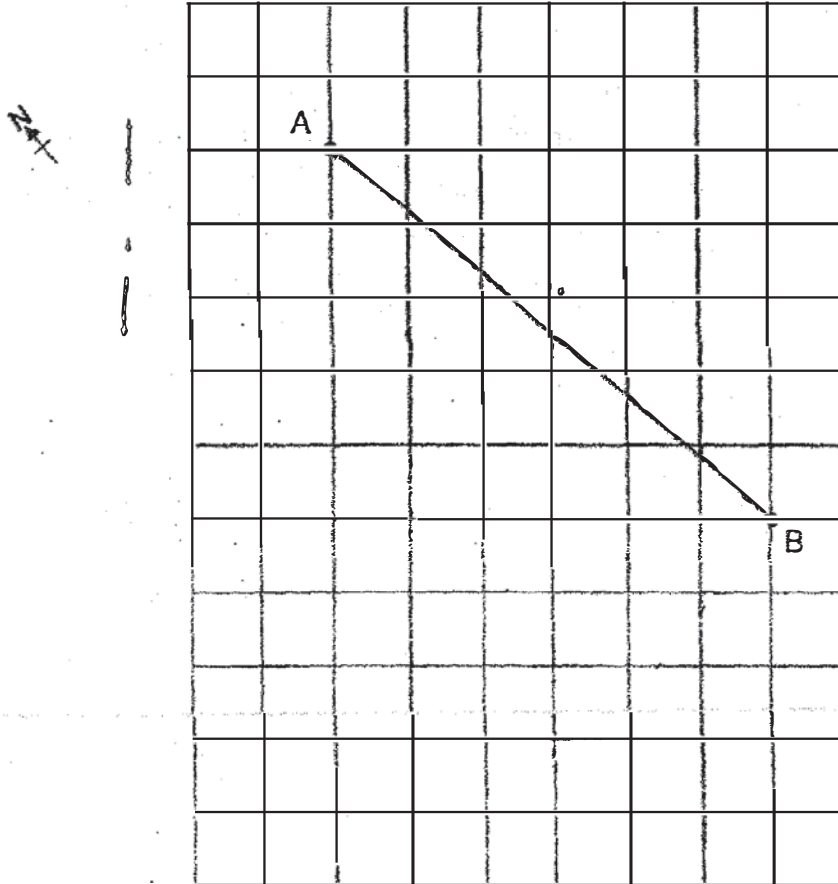
28. The participants of a Team-Building Workshop were divided equally into 2 teams – Team A and Team B.
The ratio of the number of men to the number of women in Team A is 4 : 1.
The ratio of the number of men to the number of women in Team B is 2 : 1.
What is the ratio of the total number of men to the total number of women at the workshop? Give your answer in the simplest form.

Answer: _____

---

29. The mass of a chair is $\frac{3}{7}$ the mass of a table. When Tom sits on the chair, the total mass of Tom and the chair is $\frac{2}{3}$ the mass of the table. Express Tom's mass as a fraction of the chair's mass.

Answer: _____

30. The table below shows the number of people who visited a café from Monday to Saturday. More than 10 people visited the café each day. The figures for Wednesday and Thursday were accidentally torn off. How many people visited the café on Wednesday and on Thursday?

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Average
Number of People	89	75	6	8	81	85	79

Answer: Wednesday: _____

Thursday: _____

End of Paper

Temasek Primary School

Preliminary Examination

Primary Six Standard

2019

MATHEMATICS

(PAPER 2)

Name: _____( ) Class: 6 ( )

Date : 21 August 2019

Total Time : 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

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. You are allowed to use a calculator.
6. This booklet consists of 15 printed pages.

Paper	Max Mark	Score
Paper 1 Booklet A	20	
Paper 1 Booklet B	25	
Paper 2	55	
Total Mark	100	

Parent's Signature/Date: _____

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. James had a piece of wire $17b$ cm long. He formed a triangle with sides measuring b cm, $3b$ cm and 20 cm with part of the wire. He used the remaining piece of wire to form a rectangle of length $3b$ cm.
    If $b = 8$, what was the breadth of the rectangle?

Answer: _____ cm

2. Doris bought some stickers. She gave away 28 of them. Elaine gave her the same number of stickers as the number of stickers she had left. She put all the stickers equally onto 8 albums. Each album contained 15 stickers. How many stickers did Doris buy?

Answer: _____

3. Larry stacked 8 unit cubes and glued them together to form the solid below. Draw the front view and top view of the solid on the grid below.

Top View

Front View   ·Side View
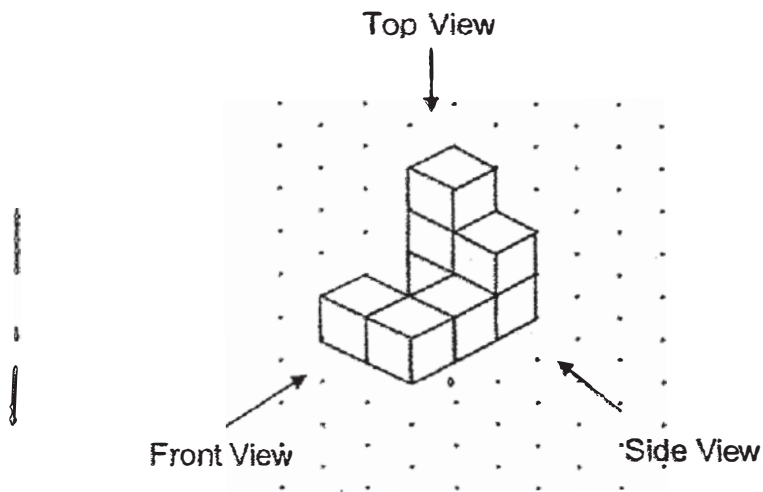
Front View
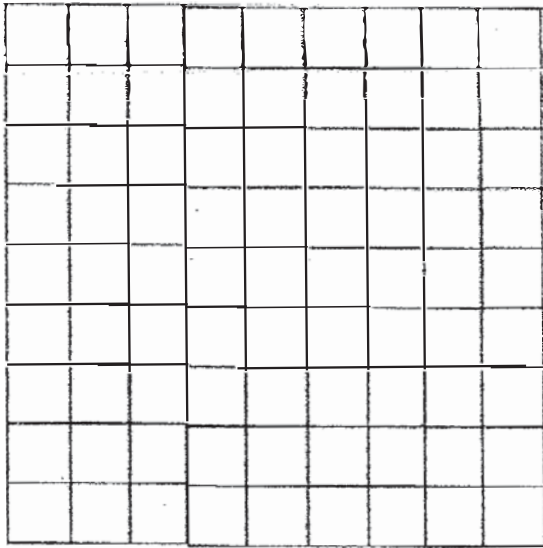
Top View

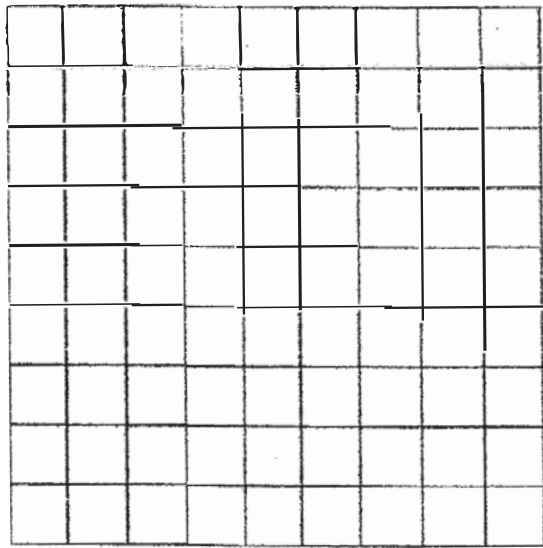4. Seri had some stamps. $\frac{2}{5}$ of them were local stamps and the rest were foreign stamps . She gave all of the local stamps and 75% of the foreign stamps to her brother.

Based on the information given above, put a tick (√) in the correct boxes next to the statements.

Statement	True	False	Not Possible to Tell
Seri has more foreign stamps than local stamps.			
Seri gave away more local stamps than foreign stamps to her brother.			
Seri had $\frac{1}{10}$ of her stamps left.			

5. A group of students were calculating their average height. They found that if one of them was 15 cm taller, their average height will be 142 cm. However, if one of them was 9 cm shorter, their average height would be 139 cm. How many students were there in the group?

Answer: _____

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

(45 marks)

6. A belt cost p. A pair of trousers cost twice as much as a belt. A T-shirt cost $8 less than the pair of trousers.

(a) What is the cost of one T-shirt? Give your answer in terms of p.
(b) If $p = 15, what is the total cost of the 3 items?
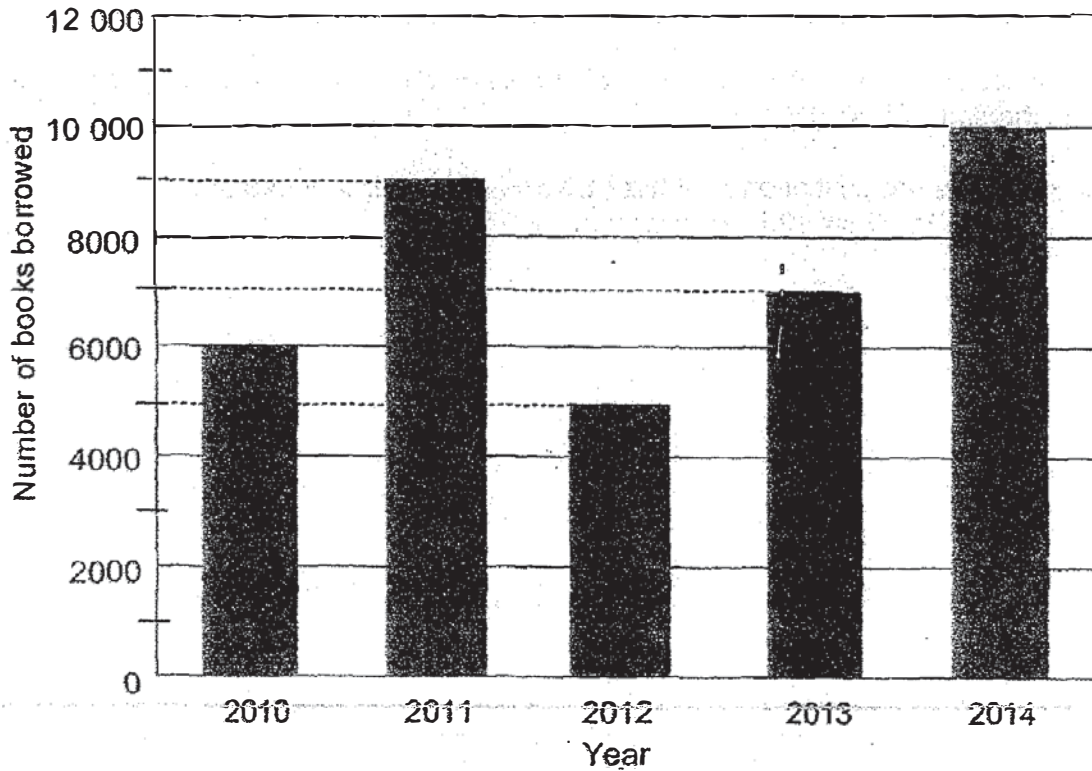
Answer: (a) _____ [1]

(b) _____ [2]

7. Bernard spent $\frac{2}{7}$ of his money on some canned food. He spent $\frac{1}{2}$ of the remaining money on a sack of rice.

(a) What fraction of his money did he spend on the sack of rice?
(b) If he was left with $20, how much money did Bernard have at first?

Answer: (a) _____ [1]

(b) _____ [2]

8. The bar graph below shows the number of books borrowed from a library each year from 2010 to 2014.

(a) In which 1-year period was there the biggest change in the number of books borrowed?

(b) In 2013, for every non-fiction book borrowed, 3 fiction books were borrowed. How many more fiction than non-fiction books were borrowed in 2013? (Assume that there were only fiction and non-fiction books in the library.)

Answer: (a) _____to _____[1]

(b) _____[2]

9. Kenneth took part in a quiz in which he had to answer 70 questions. In the quiz, 5 marks were awarded for each correct answer and 2 marks were deducted for each wrong answer. Kenneth scored a total of 182 marks for the quiz.

   (a) What is the difference between his greatest possible score and his actual score?

   (b) How many questions did he answer wrongly?

Answer: (a)_____ [1]

(b)_____ [2]

10. Tap A can fill a tank in 4h.
Tap B can fill the same tank in 5h.

(a) What fraction of the tank can both taps fill in 1h?
(b) How long would it take both taps, which are turned on at the same time, to fill up the tank? (Leave your answer in hours.)
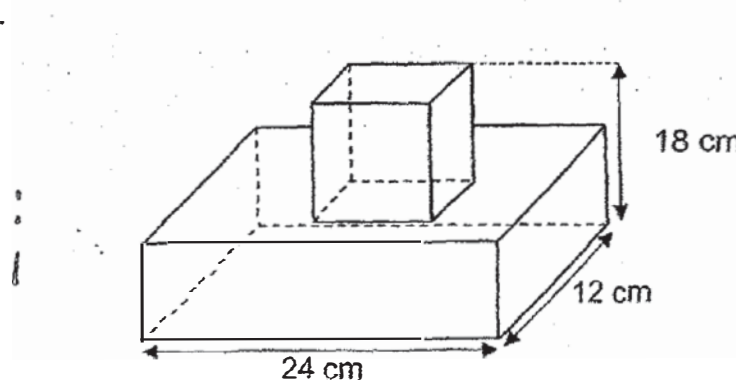
Answer: (a) _____[1]

(b) _____[2]

11. Town A and Town B were 389 km apart. At 11.15 p.m., Gary left for Town B from Town A travelling at an average speed of 76 km/h. He travelled at this speed for 2h 45 min before increasing his speed by 4 km/h for the rest of the journey.

    (a) What was the time taken by Gary for the rest of the journey after he increased his speed? Give your answer in hours.

    (b) What was his average speed for the whole journey from Town A to Town B?

Answer: (a) _____[2]

(b)_____[2]

12. The figure below shows a flower vase of height 18 cm. It is made from two containers. The top container is in the form of a cube of length 8 cm. The bottom container is in the form of a cuboid. Its base measures 24 cm by 12 cm.

(a) Find the capacity of the flower vase. Give your answer in litres.
(b) 3.2ℓ of water was poured into the flower vase. Find the height of water level in the vase.
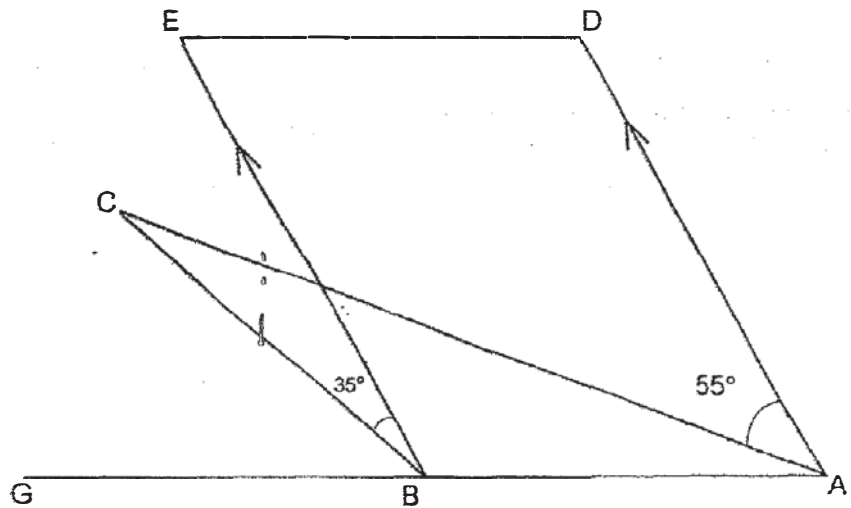

18 cm

12 cm

24 cm

Answer: (a) _____ [2]

(b) _____ [2]

13. The figure below is not drawn to scale. AFC and BFE are straight lines.
AB = BC and AD // BE. ∠CAD = 55° and ∠CBE = 35°.

(a) Find ∠CAB.
(b) Find ∠CBG.
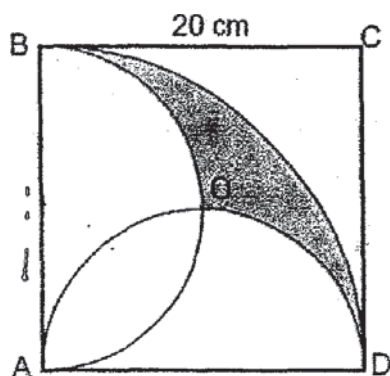

Answer: (a) _____[2]

(b) _____[2]

14. Farmer Brown had a total of 40 ducks and geese in his farm. After selling 29 of them, the ratio of the number of ducks sold to the number of ducks left was 4 : 1. The ratio of the number of geese sold to the number of geese left was 3 : 2. What was the ratio of the number of ducks left to the number of geese left?

Answer: _____ [3]

15. In the figure below, ABCD is a square of side 20 cm. O is the centre of the square. ABD is a quadrant. AOB and AOD are identical semicircles.

(a) Find the perimeter of the shaded part.
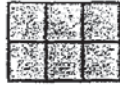(b) Find the area of the shaded part.

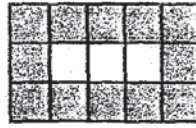(Take π = 3.14)

Answer: (a) _____ [2]

(b) _____ [3]

16. Study the pattern given below.

| Pattern 1 | Pattern 2 | Pattern 3 | Pattern 4 |
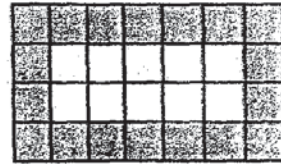
Pattern Number	Number of grey squares	Number of white squares	Total number of squares
1	1	0	1
2	6	0	6
3	12	3	15
4	18	10	28

(a) How many grey squares are there in Pattern 6?

(b) What is the total number of squares in Pattern 10?

(c) How many white squares are there in Pattern 18?

Answer: (a)_____[1]

(b)_____[2]

(c)_____[2]

17. Michelle had a candy bag which contained 35 lollipops and 50 chocolate bars. Rahul had a candy bag which contained 45 lollipops and 10 chocolate bars. After Michelle gave Rahul some lollipops and chocolate bars, 40% of Michelle's candy bag contained lollipops and 30% of Rahul's candy bag contained chocolate bars. What was the total number of lollipops and chocolate bars Michelle gave to Rahul?

Answer: _____ [5]

End of Paper

ANSWER KEY

YEAR : 2019
LEVEL : PRIMARY 6
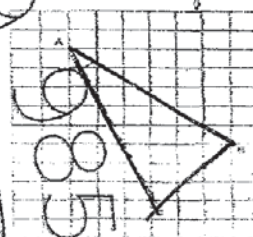SCHOOL : TAMASEK PRIMARY SCHOOL
SUBJECT : MATHEMATICS
TERM : SA2

SECTION A

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

SECTION B

Q16 36

Q17 16π

Q18 $\dfrac{14}{15}$

Q19 3.5

Q20 20m

Q21 18

Q22

Q27

Q28 11 : 4

Q29

Q30 (a) 66 (b) 78

SECTION C

Q1 Length of wire
$$17b - b - 3b - 20$$
$$= 13 \times 8 - 20$$
$$= 84$$

Breadth of wire
$$(84 - 6b) \div 2$$
$$= 84 - (6 \times 8) \div 2$$
$$= 18cm$$

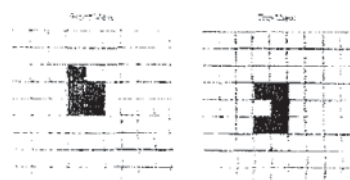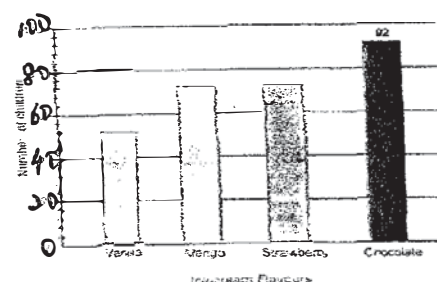Q2 $8 \times 15 = 120$
$120 \div 2 = 60$
$60 + 28 = 88$

Q3

Q23 1500

Q24 450

Q25 60km/h

Q26

Q4

Statement	True	False	Not Possible to Tell
Seri has more foreign stamps than local stamps.	√		
Seri gave away more local stamps than foreign stamps to her brother.		√	
Seri had $\frac{1}{10}$ of her stamps left.			√

Q5   Let x = numbers of students

$$\frac{142 \times x + 15}{x} = \frac{139 \times x - 9}{x}$$

$$142x + 15 = 139x - 9$$

$$3x = 24$$

$$x = 8 \text{ students}$$

Q6   (a) $2p - 8$

      (b) $2p - 8 + p + 2p$

$$= 5p - 8$$
$$= 5 \times 15 - 8$$
$$= \$67$$

Q7   (a) $(^7/_7 - ^2/_7) \div 2$

$$^5/_{14}$$

      (b) $5u = \$20$

$$14u = \$20 \times ^{14}/_5$$
$$= \$56$$

Q8   (a) 2011 to 2012

      (b) $7000 \div 4 \times 2 = 3500$

Q9   (a) $70 \times 5 - 182 = 168$

      (b) $168 \div 7 = 24$

Q10   (a) $^1/_4 + ^1/_5 = ^9/_{20}$

      (b) $20 \div 9 = 2\frac{2}{9} h$

Q11   (a) $389 - \left(2\frac{3}{4} \times 76\right)$

$$= 389 - 209$$
$$= 180$$
$$180 \div 80 = 2\frac{1}{4}$$

      (b) $2\frac{3}{4} + 2\frac{1}{4} = 5h$

$$389 \div 5 = 77.8 km/h$$

Q12   (a) $(24 \times 12 \times 18) + (8 \times 8 \times 8)$

$$3392 ml = 3.392 l$$

      (b) $3392 - 3200 = 192$

$$192 \div (8 \times 8) = 3$$
$$18 - 3 = 15 cm$$

Q13   (a) 20^0

      (b) 40^0

Q14

Duck	Geese	Total
5u	5p	40
4u	3p	29
1u	2p	11

$$4 \times (1u + 2p) = 4 \times 11$$
$$4u + 8p = 44$$
$$5p = 44 - 29$$
$$p = 3$$
$$2p = 6 geese$$
$$11 - 6 = 5 ducks$$
$$\therefore 5:6$$

Q15   (a) $\frac{1}{4} \times 2\pi \times 40 + 2(\frac{1}{4} \times 2\pi \times 20)$

      (a) $31.4 + 31.4 = 62.8 cm$

      (b) $\frac{1}{4} \times 20 \times 20 \times \pi - \frac{1}{4} \times 10 \times 10 \times \pi$

      (b) $-\frac{1}{4} \times 10 \times 10 \times \pi - 10 \times 10$

      (b) $314 - 78.5 - 78.5 - 100$

      (b) $= 57$

Q16   (a) 30

      (b) 190

      (c) 528

Q17   25 (11 lollipops and 14 chocolates)