Temasek Primary School

Preliminary Examination

Primary Six Standard

2018

MATHEMATICS

(PAPER 1 BOOKLET A)

Name: _____ ( ) Class: 6 ( )

Date : 21 August 2018

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 10 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 your answer on the Optical Answer Sheet.
(20 marks)

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1. The value of the digit 5 in 865 973 is _____.

(1) 50
(2) 500
(3) 5 000
(4) 50 000

2. Express 8 050 cm in m.

(1) 8.05 m
(2) 8.5 m
(3) 80.5 m
(4) 805 m

3. How many quarters are there in $8\frac{1}{2}$?

(1) 17
(2) 20
(3) 32
(4) 34

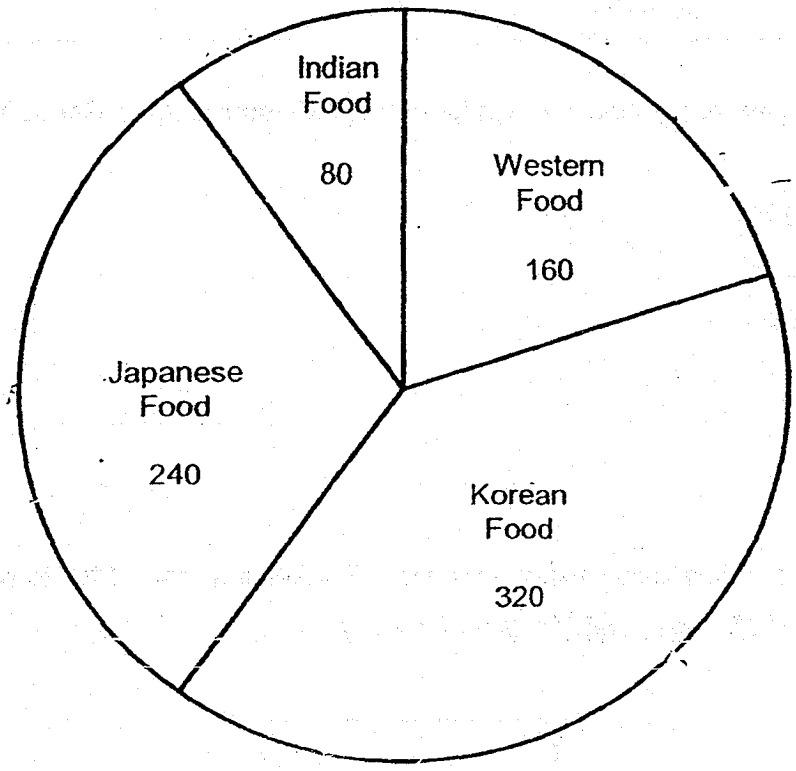
4. Find the value of $11y - 5 + \frac{7y}{4}$ when $y = 8$.

(1) 220
(2) 180
(3) 97
(4) 64

5. A rectangular block of wood measuring 50 cm by 5 cm by 5 cm was cut into five equal pieces. What was the volume of each piece of wood?

(1) 210 cm^3
(2) 250 cm^3
(3) 1 050 cm^3
(4) 1 250 cm^3

6. A group of 800 students was asked to choose their favourite food. The pie chart below shows their choices and the number of students who chose each type of food. Which type of food was chosen by 40% of the students?



(1) Indian Food
(2) Korean Food
(3) Western Food
(4) Japanese Food

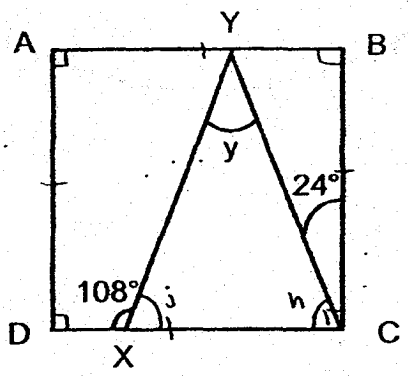
7. The table below shows the scores obtained by Choon Tuck in an online game.

Online Game	Score
Game 1	10
Game 2	25

Find the percentage increase in Choon Tuck's scores from Game 1 to Game 2.

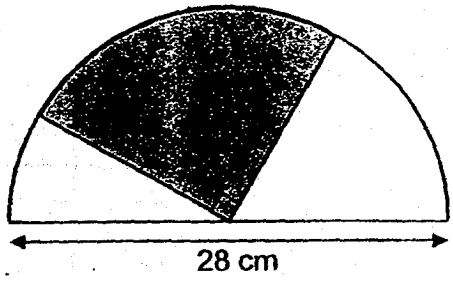
(1) 150%
(2) 100%
(3) 60%
(4) 40%

8. The figure below is not drawn to scale. ABCD is a square. CXY is a triangle. $\angle DXY = 108°$ and $\angle BCY = 24°$. Find $\angle y$.



(1) 42°
(2) 48°
(3) 66°
(4) 72°

9. The figure below is not drawn to scale. It shows a shaded quadrant in a semicircle. The diameter of the semicircle is 28 cm. Find the total area of the unshaded parts. (Take $\pi = \frac{22}{7}$)



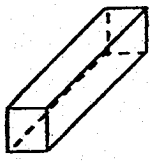
(1) 144 cm^2

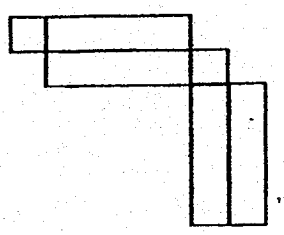
(2) 154 cm^2

(3) 308 cm^2

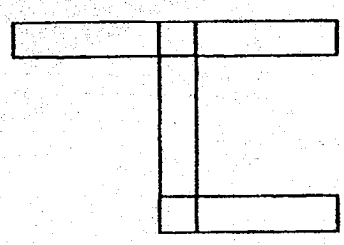
(4) 616 cm^2

10. Which of the following figure is <u>not</u> a net of the solid below?

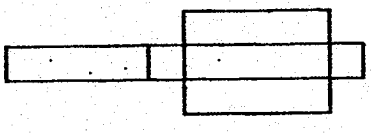




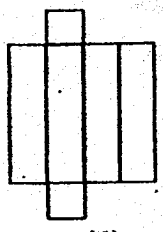
(1)



(2)



(3)

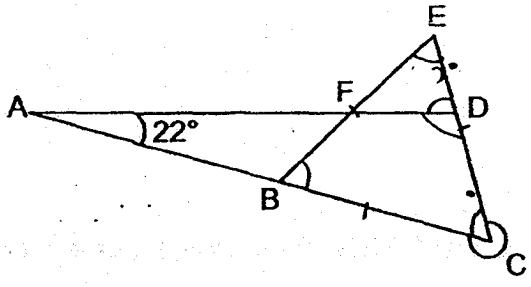


(4)

11. A group of Brownies calculated their average collection from a fundraising. They discovered that if one of them collected $200 more, their average collection would be $240. If one of them collected $340 less, their average collection would be $180. How many Brownies were there in the group?

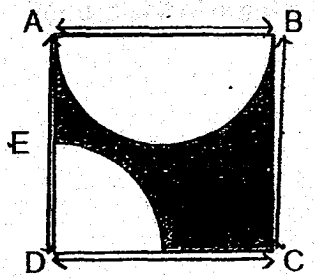
(1) 9
(2) 8
(3) 5
(4) 4

12. The figure below is not drawn to scale. BCE is an equilateral triangle. ABC and AFD are straight lines. If $\angle BAF = 22°$, what is the difference between the **marked angles**, $\angle EDF$ and $\angle BCD$?



(1) 338°
(2) 300°
(3) 278°
(4) 218°

13. The figure below is not drawn to scale. ABCD is a square of area 100 m^2. A semicircle and a quadrant lie within Square ABCD. AE = ED. Find the area of the shaded part. (Leave your answer in terms of π.)



(1) $(100 - 6\frac{1}{4}\pi)\ m^2$

(2) $(100 - 7\frac{1}{2}\pi)\ m^2$

(3) $(100 - 12\frac{1}{2}\pi)\ m^2$

(4) $(100 - 18\frac{3}{4}\pi)\ m^2$

14. There were 800 adults at a carnival. 80% of them were women. Halfway through, some women left the carnival. The ratio of the number of women to the number of men became 7 : 4. How many women left the carnival?

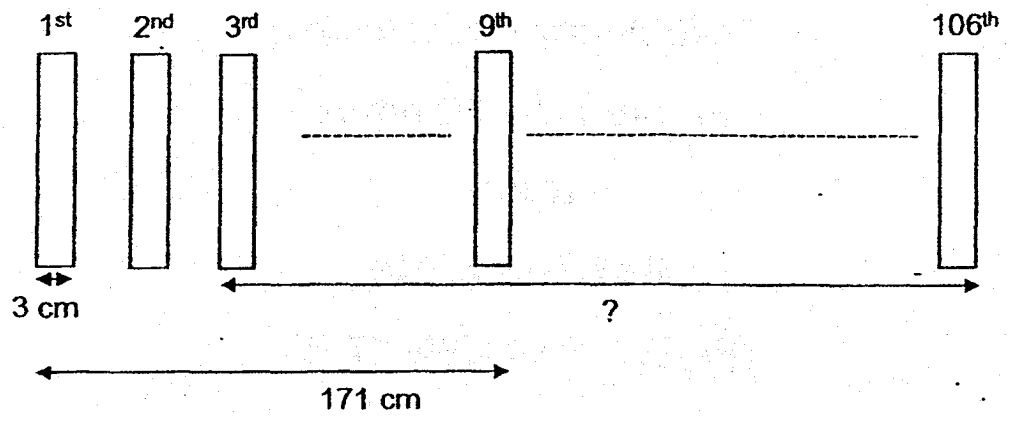
(1) 280

(2) 360

(3) 480

(4) 640

15. Nine identical rectangular cards are placed in a straight line at an equal distance from one another as shown below. The total distance taken from the 1st card to the 9th card is 171 cm. The width of each rectangular card is 3 cm.



What is the total distance taken from the 3rd card to the 106th card?

(1) 2166 cm
(2) 2160 cm
(3) 1989 cm
(4) 1957 cm

End of Booklet A

(Go on to Booklet B)

Temasek Primary School

Preliminary Examination

Primary Six Standard

2018

MATHEMATICS

(PAPER 1 BOOKLET B)

Name: _____ ( ) Class: 6 ( )

Date : 21 August 2018

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 $66 - (36 + 3) \div 3$.

Ans: _____

17. Find the value of $22.62 \div 30$.

Ans: _____

18. The mass of flour in a bag was 5 kg. It was repacked into packets of $\frac{2}{5}$ kg each.

What was the most number of packets of flour that were repacked?

Ans: _____

19. Alice, Bernice and Clarissa sold 320 donation cards in the ratio of 4 : 3 : 1. How many donation cards did Alice sell?

Ans: _____

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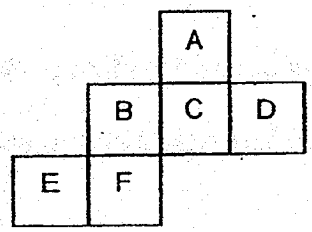
20. The figure below shows the net of a cube. The net is folded to make a cube. Which letter is opposite letter "F"?



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)

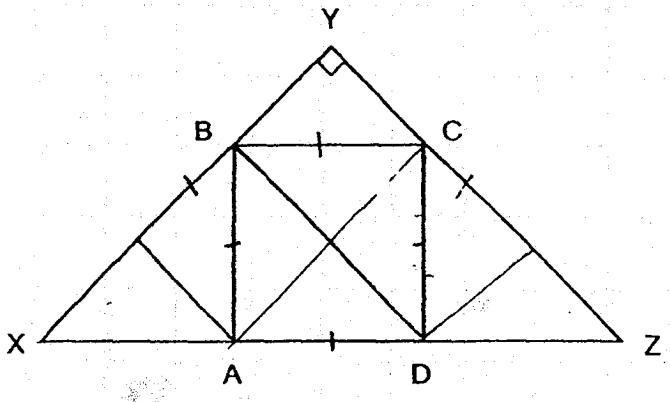
21. A group of children donated $200 altogether. The table below shows the amount of money donated by each child in the group.

Amount of money donated per child	$1	$2	$3	$4
Number of children	35	24	15	?

How many children donated $4?

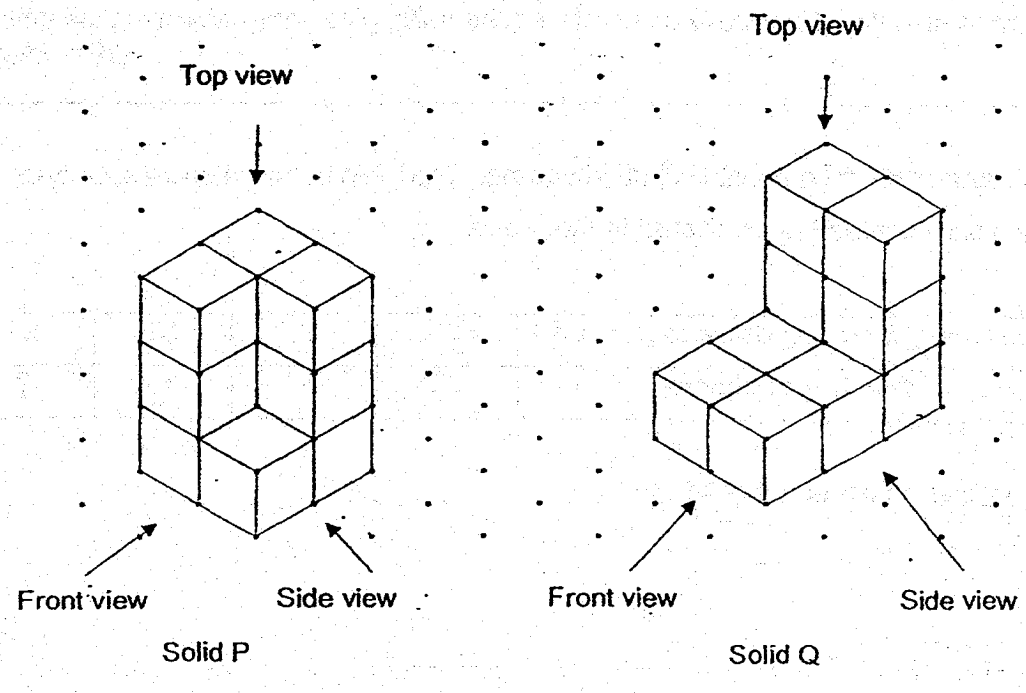
Ans: _____

22. The figure below is not drawn to scale. ABCD is a square. XYZ is a right-angled isosceles triangle of area 108 cm^2. Find the area of Square ABCD.



Ans: _____ cm^2

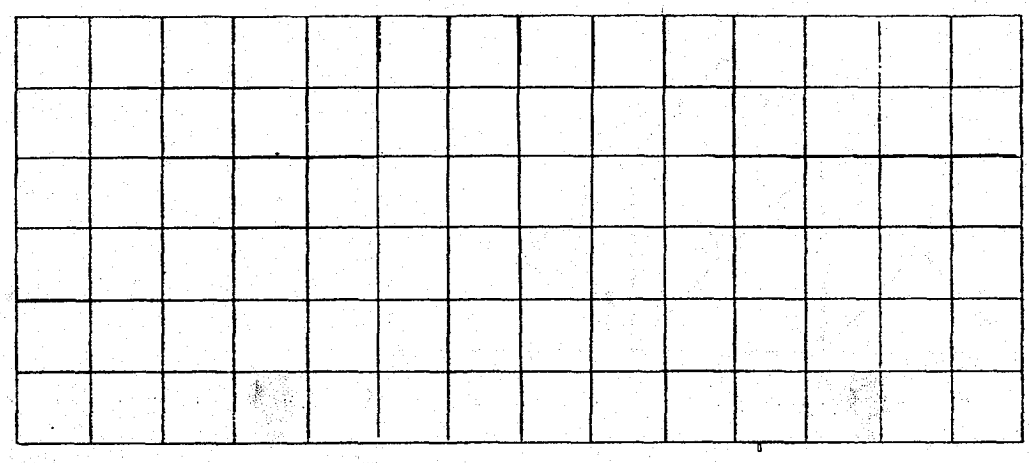
23. Study the solids below carefully.



(a) Name the view of Solid P and Solid Q that is the same. (1 mark)

Ans: (a) _____

(b) Draw the view of Solid P and Solid Q that is the same below. (1 mark)



24. At a bookshop, 3 identical pens cost as much as 2 identical notebooks. Each pen costs \$0.80 less than each notebook. What is the cost of a notebook?

Ans: \$_____

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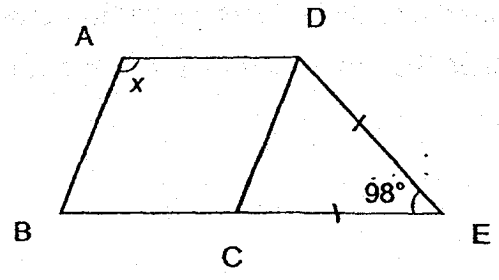
25. The figure below is not drawn to scale. ABCD is a rhombus. CDE is an isosceles triangle. BCE is a straight line. CE = DE and $\angle CED = 98°$. Find $\angle x$.



Ans: _____ °

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26. Joyce was given a fixed amount of pocket money each month. In January, she spent $100 and saved the rest. In February, she spent 10% less and her savings increased by 25%. How much was Joyce's pocket money for each month?

Ans: _____

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27. Bedok and Kuala Lumpur are about 360 km apart. At 9.00 a.m., Mr Chong travelled from Bedok to Kuala Lumpur while Mr Ma travelled from Kuala Lumpur to Bedok. Mr Chong's speed was 80 km/h while Mr Ma's speed was 70 km/h. Both of them did not change their speeds throughout their journeys. At what time did they pass each other?

Ans: _____ a.m.

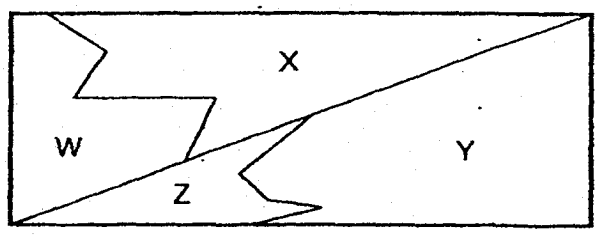
---

28. Ming Ming gave \$60 to his sister and $\frac{1}{5}$ of the remainder to his brother. In the end, Ming Ming was left with $\frac{2}{3}$ of his money. How much money did Ming Ming have at first?

Ans: _____

---

29. The rectangle below is divided into four parts W, X, Y and Z. The ratio of Area W to Area X is 3 : 5. The ratio of Area Y to Area Z is 1 : 2. What fraction of the total area is Area W? Give your answer in its simplest form.



Ans: _____

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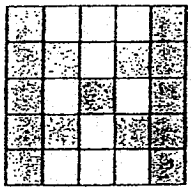
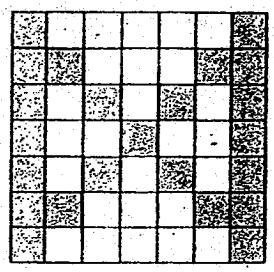
30. Azlinda formed the pattern below using white and grey tiles. Study the pattern carefully.

Pattern 1



Pattern



How many white tiles would Azlinda use to build Pattern 7?

Ans: _____

End of Paper

Temasek Primary School

Preliminary Examination

Primary Six Standard

2018

MATHEMATICS

(PAPER 2)

Name: _____ ( ) Class: 6 ( )

Date : 21 August 2018

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)

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1. Lyndi had 15 m of cloth. She cut 2y cm from it to give to Bob. She gave Lucas 30 cm of the cloth. She used all the remaining cloth to sew 7 similar dresses. If Lyndi used equal length of cloth for each dress, what is the length of cloth used for each dress? Give your answer in terms of y.

Answer: _____ cm

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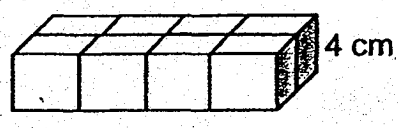
2. Dae made the cuboid shown below using cubes of sides 4 cm. What is the volume of the cuboid?



Answer: _____ cm^3

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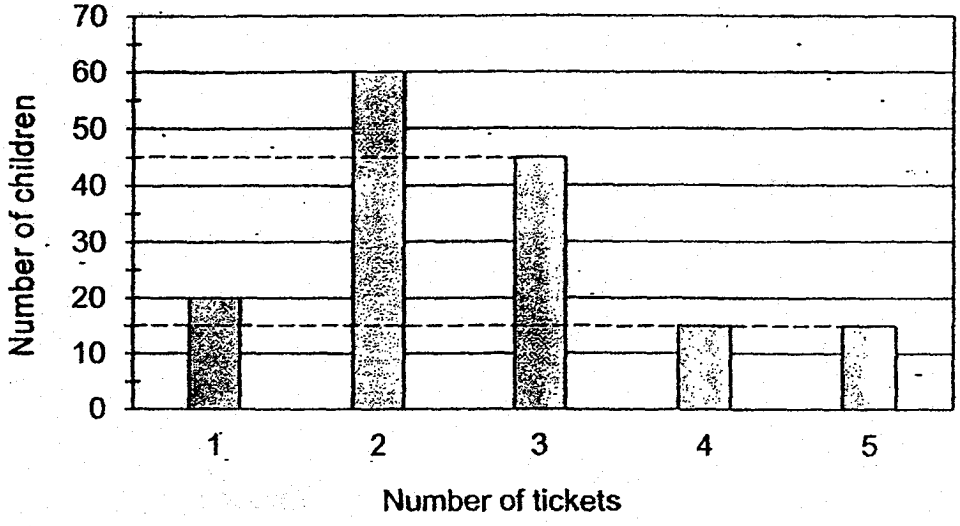
3. The bar graph below shows the number of tickets sold for a concert to a group of children.



How many children purchased more than 2 tickets?

Answer: _____

4. A group of girls shared some sweets among themselves. When each girl took 11 sweets, the last girl had 16 sweets. When each girl took 8 sweets, there were 32 sweets left over. How many sweets were there altogether?

Answer: _____

5. Jamie takes 6 days to paint a house. Her sister takes 10 days to paint the same house. If they work together, what fraction of the house will they be able to paint in 3 days? Give your answer in its simplest form.

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 or part-question. (45 marks)

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6. Joash bought a total of 30 notebooks and pencil cases. Each notebook cost \$9 and each pencil case cost \$3 more. The total cost of the pencil cases is \$87 more than the total cost of the notebooks.

   (a) How many notebooks did Joash buy?

   (b) How much did he spend on all the pencil cases?

Answer: (a) _____ [2]

(b) _____ [1]

---

7. Ken travelled from his house to the park. He ran $\frac{1}{3}$ of the journey in 3 minutes and jogged $\frac{3}{5}$ of the remaining journey. He walked the rest of the journey in 2.5 minutes at an average speed of 80m/min. What was Ken's running speed?

Answer: _____ [3]

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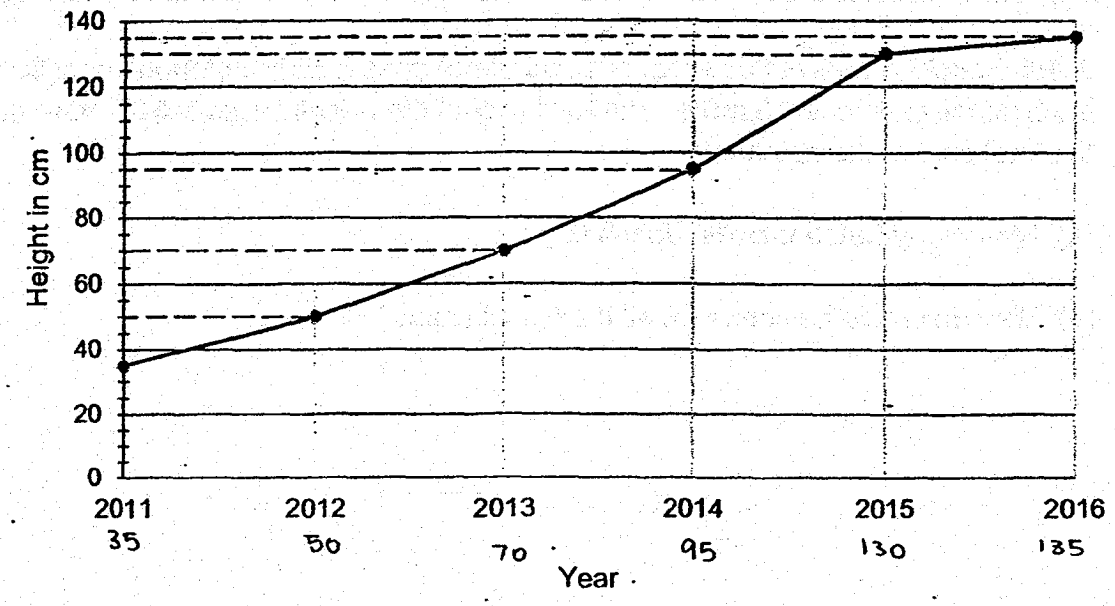
8. The line graph below shows the height of a mango tree measured in January of each year from 2011 to 2016.



(a) In which year was the height the mango tree twice its height in 2011?

(b) What was the average height of the mango tree from 2012 to 2015?

Answer: (a) _____ [1]

(b) _____ [2]

9. The table below shows the number of buns sold at a bakery last week.

Day	Number of buns sold
Monday to Friday	$2y$ per day
Saturday	$y + 50$
Sunday	$3y - 15$

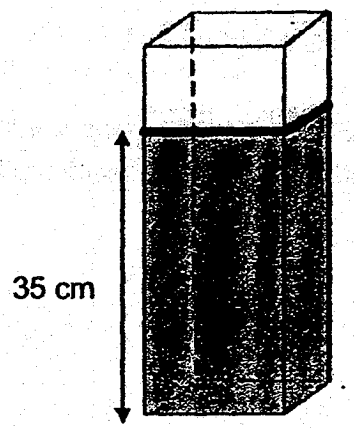
(a) If $y = 28$, what was the total number of buns sold last week?

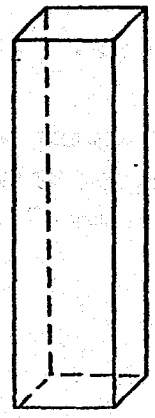
(b) The buns were usually sold for \$1.50 each. However, there was a 40% discount on all the buns sold last week. How much did the bakery collect from the sales of all the buns last week?

Answer: (a) _____ [2]

(b) _____ [1]

10. X and Y are two rectangular containers. The base area of X is 90 cm^2 while that of Y is 60 cm^2. At first, X contained water to a height of 35 cm and Y was empty, as shown below. Richard then poured some water from X to Y. After that, the height of the water level in X was 4 times that in Y. What was the new height of the water level in X?





Answer: _____ [3]

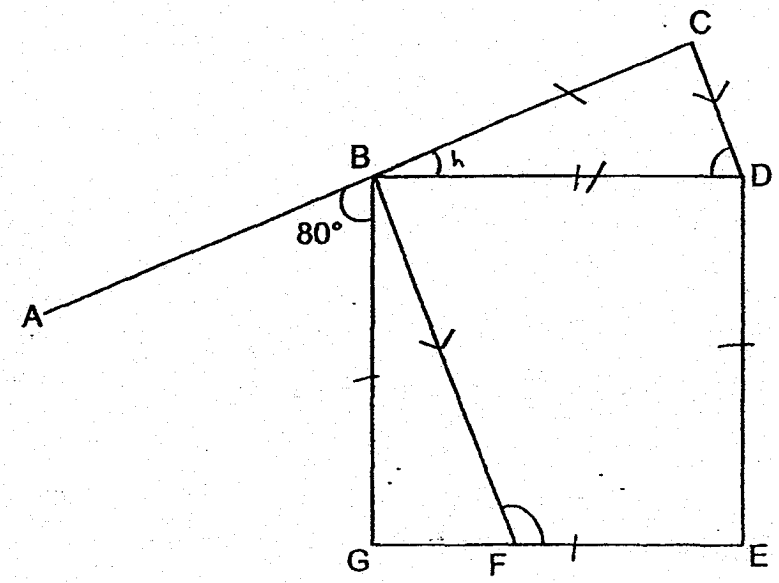
11. Roy had to paint a piece of paper. He painted $\frac{1}{5}$ of the paper yellow and 85 cm^2 of the paper red. He then painted $\frac{1}{3}$ of the remainder green and the rest blue. If the area of the blue region is $\frac{1}{4}$ of the area of the whole piece of paper, find the area of the paper.

Answer: _____ [3]

12. In the figure below, not drawn to scale, BDEG is a square and BCD is an isosceles triangle. ABC is a straight line. BF // CD and ∠ABG = 80°

(a) Find ∠BDC.

(b) Find ∠BFE.



Answer: (a) _____ [1]

(b) _____ [3]

13. The table below shows the charges of a taxi company.

Flag Down	$2.50
Every 200m up to 10km	$0.10
Every 150m after 10km	$0.10
Morning Surcharge (7.00 a.m. to 9.30 a.m.)	$2.00

(a) Rachel took a taxi to work at 11.00 a.m. and travelled a total distance of 16km. How much was her taxi fare?

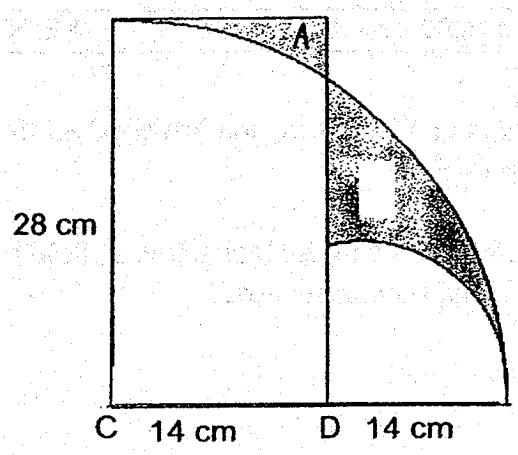
(b) Ryan paid $18 for his taxi fare when he took a taxi at 8.30 a.m. What was the maximum distance he could have travelled?

Answer: (a) _____ [2]

(b) _____ [2]

14. The figure shows two quadrants of circles, centred at C and D respectively. Find the difference between the area of the two shaded regions.

(Take $\pi = \frac{22}{7}$)



Answer: _____ [4]

15. Marcus wants to make 35 large identical stars and 20 small identical stars using wire. He has made 20 large stars and 14 small ones using 12.48 m of wire. The length of wire he used for 5 small stars is the same as that for 4 large stars.

(a) How many small stars can be made with the same length of wire used to make 20 large stars?

(b) What is the length of wire he needs to make the remaining stars?

Answer: (a) _____ [1]

(b) _____ [4]

16. There are a total of 300 people at a party. The ratio of the number of men to the number of adults is 3 : 5. The ratio of the number of boys to the number of children is 1 : 2. The total number of males is 166.

(a) How many adults are there at the party?

(b) How many girls are there at the party?

Answer: (a) _____ [3]

(b) _____ [2]

17. There were 27 pieces of $5 notes and $10 notes altogether in the piggy bank. Lukas used 75% of the $5 notes and put in 12 more pieces of $10 notes. As a result, the number of $5 notes was 40% the number of $10 notes.

(a) What was the total value of the $5 notes at first?

(b) What was the total amount of money Lukas had in the piggy bank in the end?

Answer: (a) _____ [3]

(b) _____ [2]

End of Paper

ANSWER KEY

YEAR	:	2018
LEVEL	:	PRIMARY 6
SCHOOL :	:	TEMASEK PRIMARY
SUBJECT :	:	MATHEMATICS
TERM	:	PRELIMINARY EXAMINATION

Paper 1

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

Q16 53

Q17 0.754

Q18 12

Q19 160

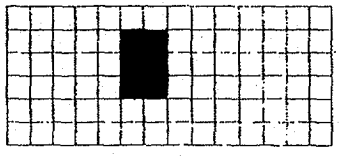
Q20 A

Q21 18

Q22 48 cm^2

Q23 (a) Front view

(b)



Q24 $2.40

Q25 139°

Q26 $140

Q27 11:24 am

Q28 $360

Q29 $\frac{3}{16}$

Q30 170

Paper 2

Q1 7 dress $\rightarrow 15m - 2y$ cm $= 30$ cm
$\rightarrow (1500 - 2y - 30)$ cm
$\rightarrow (1470 - 2y)$ cm
Length of cloth per dress $\Rightarrow \left(\frac{1470 - 2y}{7}\right)$ cm

Q2 Vol. of 1 cube $\rightarrow (4 \times 4 \times 4)$ cm$^3 = 64$ cm^3
Vol. of 1 cuboid $\rightarrow 64$ cm$^3 \times 8 \Rightarrow$ <u>512 cm^3</u>

Q3 No. of children $\rightarrow 45 + 15 + 15 \Rightarrow$ <u>75</u>

Q4 Let x be the number of girls
$11x + 5 = 8x + 32$
$3x = 27$
$X = 27 \div 3 = 9$ girls
No. of sweets $\rightarrow 9 \times 8 + 32 \Rightarrow$ <u>104 sweets</u>

Q5 Jamie $\rightarrow$ 1 day $\rightarrow \frac{1}{6}$ house

Sister $\rightarrow$ 1 day $\rightarrow \frac{1}{10}$ house

Together $\rightarrow$ 1 day $\rightarrow \frac{1}{6} + \frac{1}{10} = \frac{4}{15}$ house

Fraction of house painted in 3 days $\rightarrow \frac{4}{15} \times 3 \Rightarrow \frac{4}{15}$

Solutions to Word Problems

Temasek Paper 2

P6 Mathematics SA2 2018

Show your working clearly in the space provided for each question and write your answers in the spaces provided.

6. a)

Number of notebooks = n

Number of pencil cases = p

p + n = 30 (1)

9p + 9n = 270 (2) = (1) x 9

12p – 9n = 87 (3)

21p = 357

p = 17

Number of notebooks = n = 30 – 17 = 13

b)

Cost of all pencil cases = 12 x 17 = $204

Ans: (a) 13
(b) $204

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7. Let total distance from house to park = 15u (multiple of 3, 5)

Remaining distance = $\frac{2}{3}$ x 15u = 10u

Walking distance = $\frac{2}{5}$ x 10u = 4u

Walking distance = 2.5 min x 80 m/min = 200 m

4u = 200m

u = 50 m

Running distance = $\frac{1}{3}$ x 15u = 5u = 5 x 50 = 250 m

Running speed = 250 ÷ 3 = 83.3 m / min

Ans: 83.3 m / min
.

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8. a)

In Year 2013 the height of mango tree was double that in 2011

b)

Average height from 2012 to 2015 = (50+70+95+130) ÷ 4 = 86.25cm

Ans: (a) 2013

(b) 86.25cm

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9. a)

Total buns sold last week = 2y x 5 + y + 50 + 3y – 15 = 14y + 35

= 14 x 28 + 35 =427

b) Discounted price for each bun = 1.50 x 0.6 = $0.90

Total sales = 427 x 0.90 = $384.30

Ans: (a) 427

(b) $384.30

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10. Let final level at X = 4u

Final level at Y = u

Total volume at first = 90 x 35 = 3150 cm^3

Total volume at last = 4u x 90 + u x 60 = 420 u

420u = 3150

u = 3150 ÷ 420 = 7.5 cm

Final level at X = 7.5 x 4 = 30 m

Ans: 30 m

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11. Let area of paper at first = 40u

$\frac{2}{3}$ of remainder painted blue → $\frac{1}{4}$ of total → 10u

$\frac{3}{3}$ of remainder → $\frac{3}{2}$ x 10u = 15u

Area painted yellow = $\frac{1}{5}$ x 40u = 8u

Area painted red = 40u – 15u – 8u = 17u

17u = 85

u = 5

Area of paper = 40 x 5 = 200 cm^2

Ans: 200 cm^2

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12. a)

∠CBD = 180 – 80 – 90 = 10°

∠BDC = (180 – 10) ÷ 2 = 85° (isosceles triangle)

b)

∠DBF = ∠BDC = 85° (alternate angle)

∠BFG = DBF = 85° (alternate angle)

∠BFE = 180 – 85 = 95°

Ans: (a) 85°
(b) 95°

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13. a)

First 10km charges = 10 ÷ 0.2 x 0.1 = $5.00

Fare of last 6 km = 6000 ÷ 150 x 0.1 = $4.00

Taxi fare = 2.50 + 5.00 + 4.00 = $11.50

b)

Morning fare minus surcharge = 18 – 2 = $16

Fare after 10km = 16 – 2.50 – 5.00 = $8.50

Distance after 10km = 8.50 ÷ 0.1 x 150 = 12.75km

Total distance = 10 + 12.75 = 22.75 km

Ans: (a) $11.50
(b) 22.75 km

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14. Area of large quadrant = $\frac{1}{4}$ x $\frac{22}{7}$ x 28 x 28 = 616 cm^2

Area of small quadrant = $\frac{1}{4}$ x $\frac{22}{7}$ x 14 x 14 = 154 cm^2

Area of right side shaded areas

= large quadrant – small quadrant – (rectangle –A)

Difference in area of 2 shaded areas = large quadrant – small quadrant – rectangle + A – A

= 616 -154 – 28 x 14 = 70 cm^2

Ans: 70 cm^2

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15. a)

Number of small stars = 20 x $\frac{5}{4}$ = 25

b)

25 small stars + 14 small stars = 12.48 m

Length of each small star = 12.48 ÷ 39 = 0.32 m

Length of each large star = (12.48 – 14 x 0.32) ÷ 20 = 0.4 m

Remainder number of large stars = 35 – 20 = 15

Length of 15 large stars = 15 x 0.4 = 6 m

Remainder number of small stars = 20 -14 = 6

Length of 6 small stars = 6 x 0.32 = 1.92 m

Length of remaining stars = 6 + 1.92 = 7.92 m

Ans: (a) 25
(b) 7.92 m

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16. a)

Ratio of number of men to adults → 3 : 5 → 3u : 5u

Ratio of number of boys to children → 1 : 2 → 1p : 2p

5u + 2p = 300 (1) Total number of people

3u + 1p = 166 (2)

6u + 2p = 332 (3) = (2) x 2

u = 32 (4) = (3) – (1)

Number of adults = 5u = 5 x 32 = 160

b)

3 x 32 + 1p = 166 substitute u into (2)

p = 166 – 96 = 70

Number of girls = 2p – 1p = 1p = 70

Ans: (a) 160

(b) 70

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17. a)

Let number of $5 notes at first = u

Number of $10 notes at first = p

u + p = 27 (1)

5u + 5p = 135 (2) = (1) x 5

In the end,

$\frac{1}{4}$ u = 0.4 (p + 12) (3)

5u = 8p + 96 (4) = (3) x 20

5u – 8p = 96 (5)

13p = 39 (1) – (5)

p = 3

u = 27 – 3 = 24

Total value of $5 notes = 24 x 5 = $120

b)

Total value at the end = $\frac{1}{4}$ x 24 x 5 + (3 + 12) x 10 = $180

Ans: (a) $120

(b) $180
