NANYANG PRIMARY SCHOOL

PRELIMINARY EXAMINATION
2018

PRIMARY 6

MATHEMATICS
PAPER 1
(BOOKLET A)

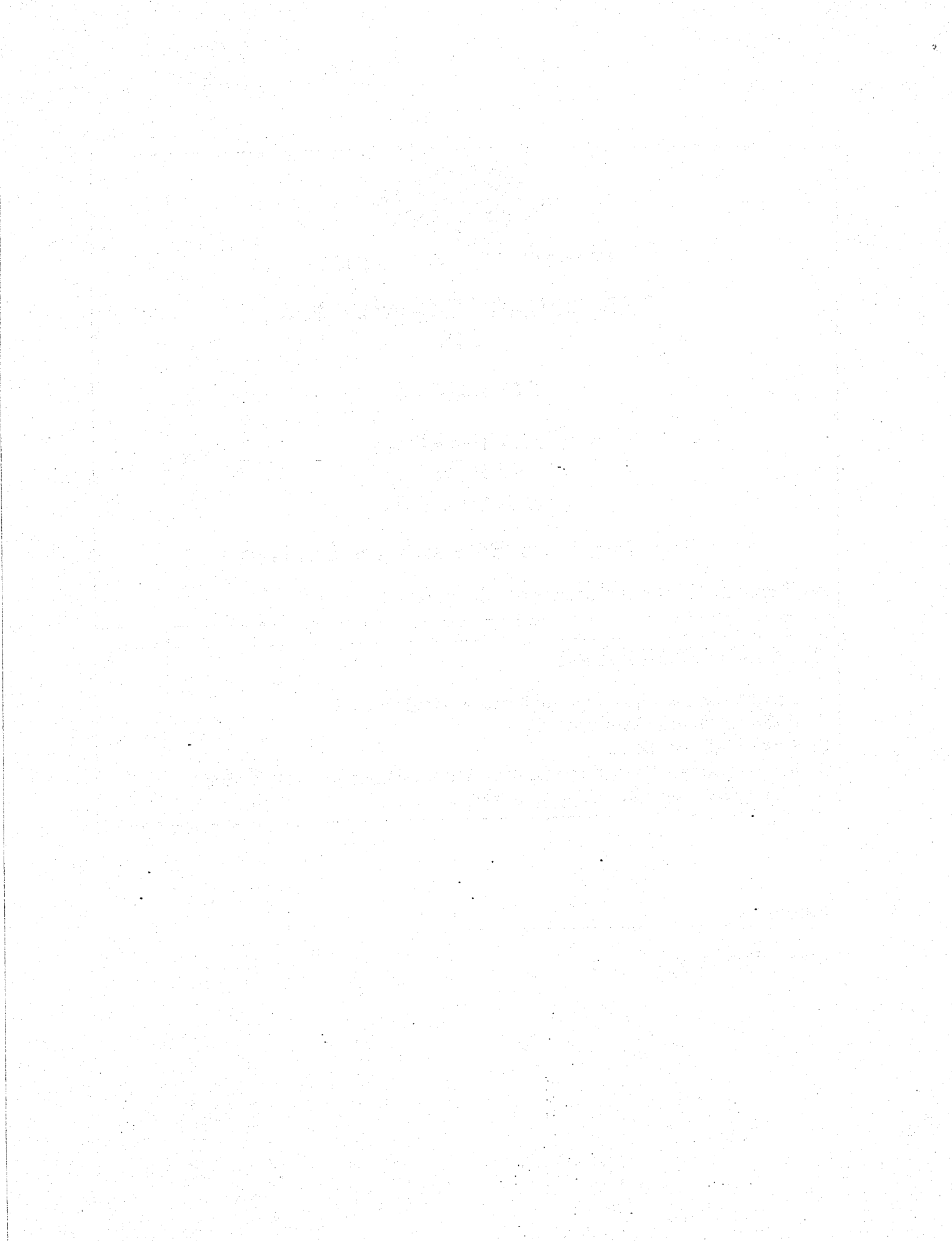Total Duration for Booklets A and B: 1 hour

Additional materials: Optical Answer Sheet (OAS)

INSTRUCTIONS TO PUPILS

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

Name: _____ (   )

Class: Primary 6 (   )

Questions **1** to **10** carry 1 mark each.   Questions **11** to **15** carry 2 marks each.
For each question, four options are given.   One of them is the correct answer.
Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer
Sheet.   (20 marks)

---

1   Round 1789 to the nearest hundred.

     (1)   1700

     (2)   1790

     (3)   1800

     (4)   2000
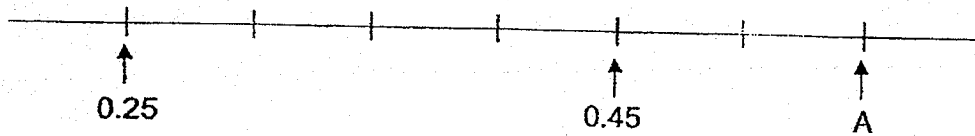
2   Which digit in 31.902 is in the tenths place?

     (1)   1

     (2)   0

     (3)   3

     (4)   9

3   In the number line below, what is the value of A?

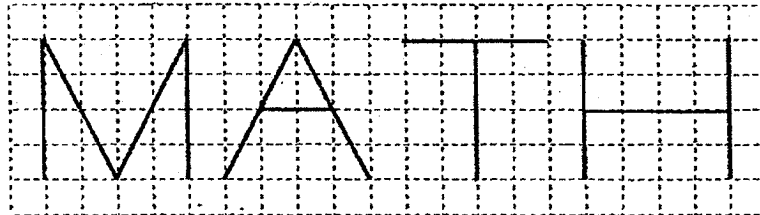   0.25   0.45   A

(1)   0.50

(2)   0.55

(3)   0.60

(4)   0.65

4   Find the value of $18 - 2p + 2 \times 3p$ when $p = 4$.

(1)   34

(2)   2

(3)   96

(4)   144

5   Which one of the following is likely to be the length of a school bus?

  (1)   1.2 m

  (2)   12 m

  (3)   120 m

  (4)   1200 m

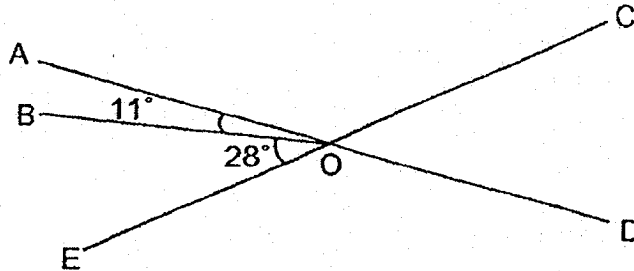6   In the diagram below, the letters M, A, T and H are drawn on a square grid.

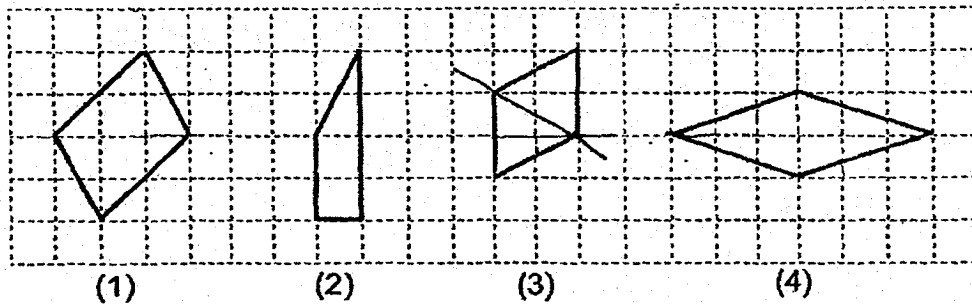Which letter has both parallel lines and perpendicular lines?

  (1)   M

  (2)   A

  (3)   T

  (4)   H

7   In the figure below, AOD and COE are straight lines.   ∠AOB = 11° and
     ∠BOE = 28°.   Find ∠COD.
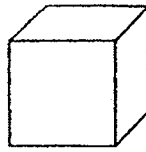

(1)   17°

(2)   28°

(3)   39°

(4)   141°

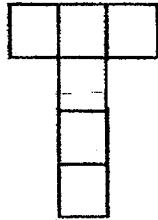8   In the square grid below, which shape is a rhombus?
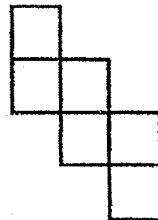
9. The figure below shows a cube.
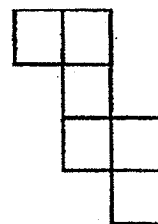

Which of the following is **not** a net of the cube?

(1)

(2)

(3)

(4)
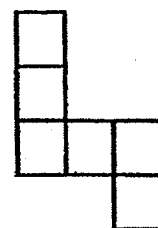
10   The pie chart below shows how Joseph spent his time on a Saturday.
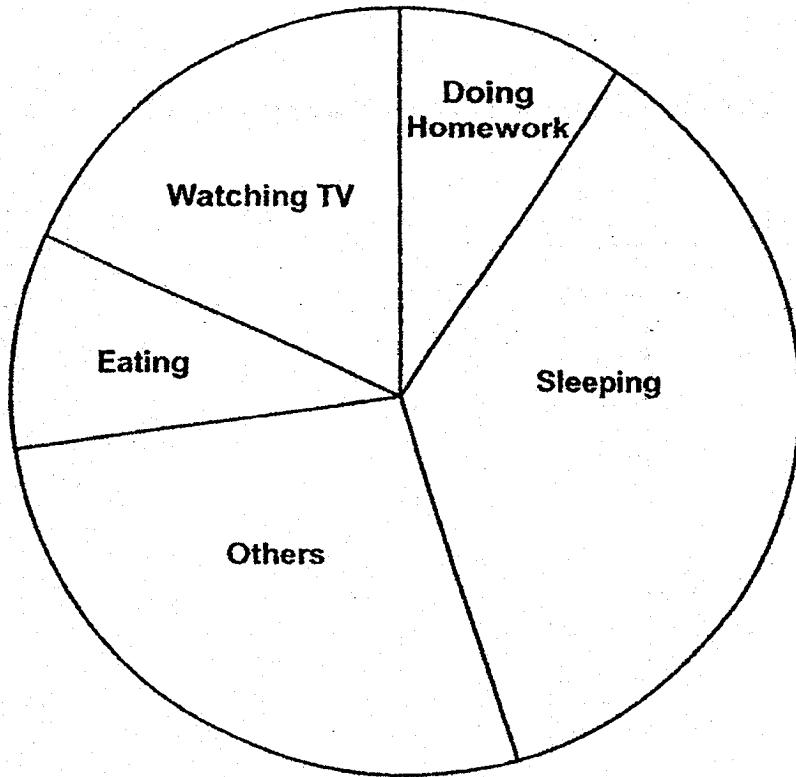
He spent an equal amount of time on eating and doing homework.
Which bar graph best represents the information in the pie chart?

(1)

Types of Activities

Amount of
time spent

Others　Sleeping　Eating　Watching　Doing
　　　　　　　　　　　　TV　homework

(2)

Types of Activities

Amount of
time spent

Others　Sleeping　Eating　Watching　Doing
　　　　　　　　　　　　TV　homework

(3)

Types of Activities

Amount of
time spent

Others　Sleeping　Eating　Watching　Doing
　　　　　　　　　　　　TV　homework

(4)

Types of Activities

Amount of
time spent

Others　Sleeping　Eating　Watching　Doing
　　　　　　　　　　　　TV　homework

7

11   Arrange the following fractions from the largest to the smallest.

$$\frac{2}{7}, \quad \frac{1}{5}, \quad \frac{4}{9}, \quad \frac{2}{11}$$

<u>Largest</u>   <u>Smallest</u>

(1) $\frac{1}{5}, \quad \frac{2}{7}, \quad \frac{4}{9}, \quad \frac{2}{11}$

(2) $\frac{2}{11}, \quad \frac{1}{5}, \quad \frac{2}{7}, \quad \frac{4}{9}$

(3) $\frac{4}{9}, \quad \frac{2}{11}, \quad \frac{2}{7}, \quad \frac{1}{5}$

(4) $\frac{4}{9}, \quad \frac{2}{7}, \quad \frac{1}{5}, \quad \frac{2}{11}$

12   Brian and Charles had some stickers. At first, the number of stickers Brian had was $\frac{4}{7}$ of the total number of stickers. Then, Brian sold $\frac{3}{8}$ of his stickers. Find the ratio of the number of stickers Brian had at the end to the number of stickers Charles had at the end.
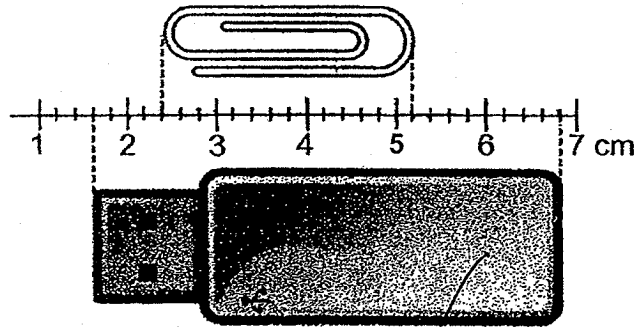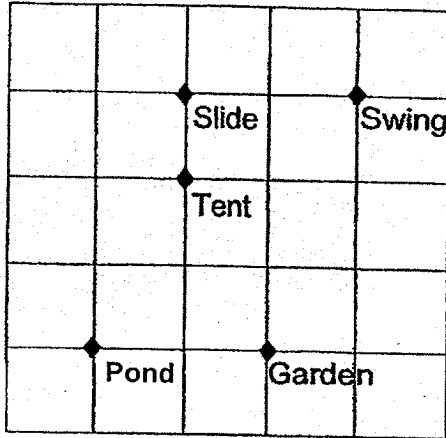
(1)   1 : 3

(2)   1 : 7

(3)   5 : 6

(4)   5 : 14

13 A thumb drive and a paper clip are placed next to a scale. Find the difference in their lengths.

(1) 1.2 cm

(2) 1.6 cm

(3) 2.2 cm

(4) 2.4 cm

14   The square grid below shows the map of a park and its landmarks.   The
     slide is north of the tent.

```
+-----+-----+-----+-----+-----+
|     |     |     |     |     |
+-----+-----+-----+-----+-----+
|     |     |◆    |    ◆|     |
|     |     |Slide|     |Swing|
+-----+-----+-----+-----+-----+
|     |     |◆    |     |     |
|     |     |Tent |     |     |
+-----+-----+-----+-----+-----+
|     |     |     |     |     |
+-----+-----+-----+-----+-----+
|     |◆    |     |◆    |     |
|     |Pond |     |Garden     |
+-----+-----+-----+-----+-----+
```

Suresh is standing at a location north of the garden and south-west of
the swing.   He is facing the pond.   Which landmark will he be facing
when he turns 45° clockwise?

(1)   Tent

(2)   Slide

(3)   Swing
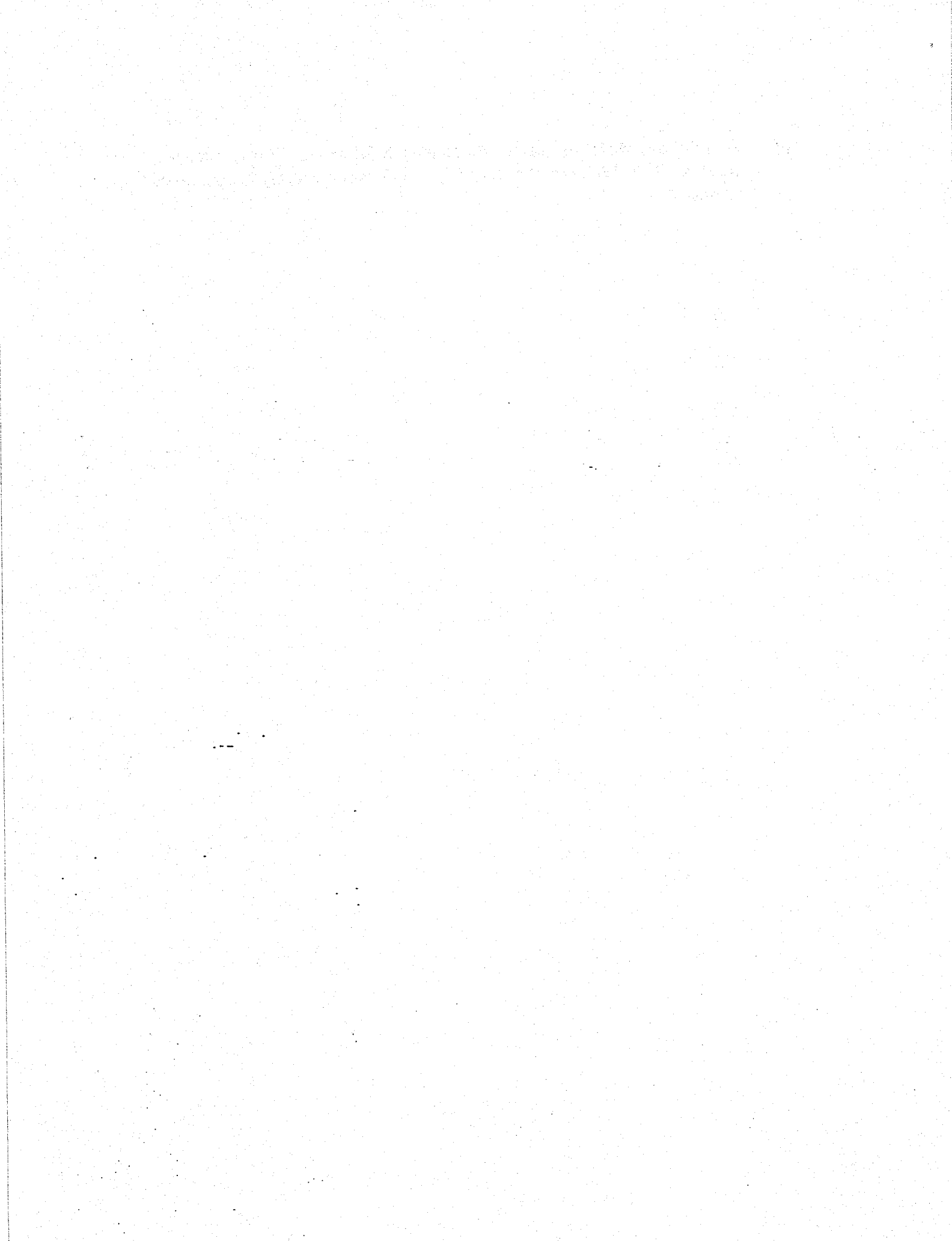
(4)   Garden

15   A and B are whole numbers.   A has exactly 2 factors.   B has exactly 4 factors.   C is the product of A and B.   At least how many factors does C have?

(1)   5

(2)   6

(3)   8

(4)   4

NANYANG PRIMARY SCHOOL

PRELIMINARY EXAMINATION
2018

PRIMARY 6

MATHEMATICS
PAPER 1
(BOOKLET B)

Total Duration for Booklets A and B: 1 hour

Name:_____ (   )

Class: Primary 6 (   )

Booklet B	/ 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 Ze Hui had 24 marbles at first. He gave 6 marbles to his brother. What fraction of his marbles did he give to his brother? Express your answer as a fraction in its simplest form.

Ans: _____

---

17 The distance between two points is **267 cm**. Express this distance in metres.

Ans: _____ m

---

18 There are 8 shaded squares in the figure below. Shade 2 more squares to form a symmetric figure with AB as the line of symmetry.

1
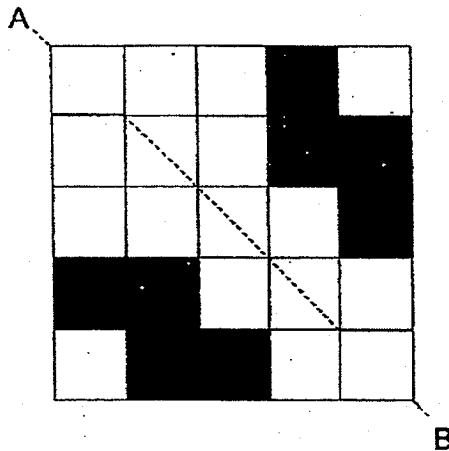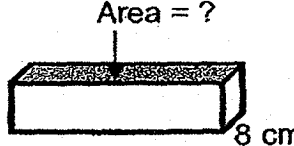
19 The figure below is made up of identical cubes. How many cubes are there in the figure?
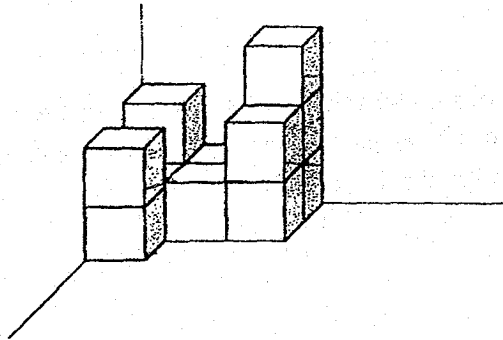
Ans: _____

---

20 In which of the following can the area of the shaded face of the cuboid be found?

Volume = 100 cm^3	Volume = 240 cm^3	Volume = 400 cm^3
5 cm Area = ?	6 cm Area = ?	Area = ? 8 cm
Cuboid A	Cuboid B	Cuboid C

Ans: Cuboid _____

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)
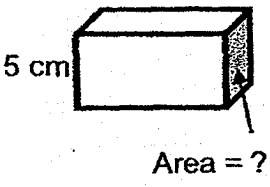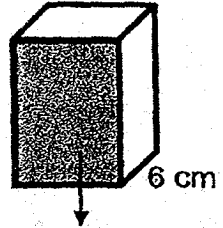
---

21   How many common factors do 16 and 20 have?

Ans: _____

---

22   Jane has $31.70   She has $0.50 less than Bala.   Mr Tan has 10 times as much money as Jane.

(a) How much money does Bala have?

(b) How much money does Mr Tan have?

Ans: (a) $ _____

(b) $ _____

---

23   This year, ABC Sports Club had 150 members.   Last year, it had 120 members.   Find the percentage increase in the number of members this year.

Ans: _____ %

---

24   The table below shows the carpark charges for a shopping mall.

CARPARK CHARGES	
7 a.m. to 6 p.m.	$0.60 for every 30 min

Mr Raj parked his car from 8.30 a.m. to 12 noon in the shopping mall.
How much did he pay ?

Ans: $ _____

---

25   Jerry had 110 buns. He ate 2 buns and packed the   ining buns
equally into 6 packets.   How many buns were there in each packet?

Ans: _____

4

26 Mrs Tay baked some cupcakes. $\frac{1}{4}$ of the cupcakes that she had baked were vanilla cupcakes $\frac{1}{5}$ of the remaining cupcakes were lychee cupcakes and the rest were chocolate cupcakes. She baked 36 chocolate cupcakes. How many cupcakes did she bake in total?

Ans:_____

27 Find the perimeter of the isosceles triangle shown below.

$\frac{3}{5}$ m

$\frac{5}{7}$ m
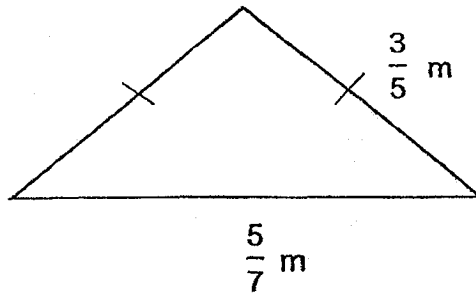
Ans:_____ m

28   Jake has $y. Kyra has $(y + 14) more than Jake. Kyra has $68. How much money does Jake have?

Ans: $ _____

---

29   In the figure below, WZY and XYZ are triangles. $\angle YWZ = 74^\circ$, $\angle XYZ = 90^\circ$ and WY = YZ. Find $\angle WYX$.

Ans: _____ °

6

30   In the figure below, WXYZ is a trapezium.   WZ is parallel to XY.
∠XWY = 52°, ∠WYZ = 66° and ∠WZY = 55°.   Find ∠WXY.

Ans: _____ °

End of Paper

NANYANG PRIMARY SCHOOL

PRELIMINARY EXAMINATION
2018

PRIMARY 6

MATHEMATICS
PAPER 2

Duration: 1 hour 30 minutes

Name: _____ (   )

Class: Primary 6 (   )

Parent's Signature: _____

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

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   Farid had $(4k + 6)$ pencils. He **bought another** k pencils and packed all the pencils equally into 3 boxes. How many pencils were there in each box? Give your answer in terms of k in the simplest form.

Ans:_____

---

2   A bicycle cost $617.10 after a discount of 15%. What was the price of the bicycle before the discount?

Ans: $ _____

---

3   A tank is empty at first. It takes 12 minutes to fill up the tank completely with Tap A alone. It takes 8 minutes to fill up the tank completely with Tap B alone. Starting with an empty tank, how long does it take for both taps together to fill half of the tank?

Ans:_____ min

---

4   In the figure below, WXYZ is a square.   The shaded parts A and B are
     two squares with different areas.   All the corners of squares A and B lie
     either on the sides of square WXYZ or on the lines WO and XZ.   What
     fraction of the square WXYZ is shaded?
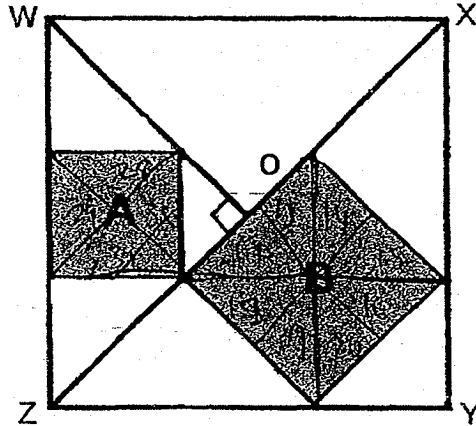
                                Ans: _____

5   A, B and C are different 2-digit numbers.   Their average is 30.   Find
     the greatest possible different between B and C.

                                Ans: _____

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

6   In the square grid below, two sides of a parallelogram have been drawn. Each side is drawn by joining dots on the square grid with a straight line. In the same way,

      (a)   complete the drawing of the parallelogram and   [1]

      (b)   draw a trapezium in the square grid with the same perimeter as the parallelogram such that it does not overlap with the parallelogram.   [1]

      (c)   Measure and write down the size of an obtuse angle in the parallelogram.

Ans: (c) _____ [1]

3
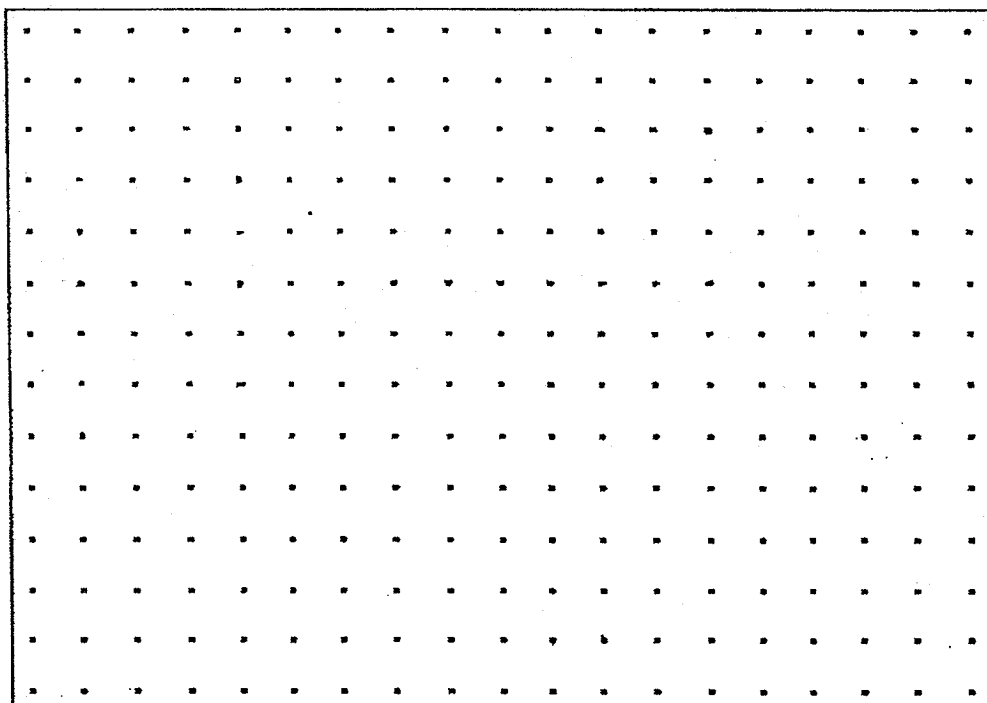
7   In the figure below, ABCD is a square and ECD is an isosceles triangle.
    $\angle DEC = 78°$ and $\angle ABE = 38°$.   Find $\angle BEC$.
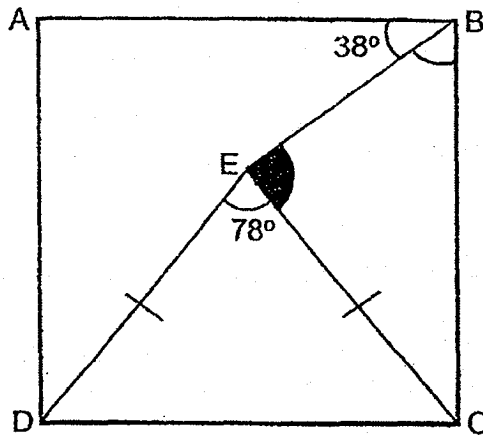
                                        Ans: _____ [3]

8   Mr Lee has a total of 36 coins.   They consist of only 20-cent, 50-cent
    and $1 coins.   He has twice as many $1 coins as 20-cent coins.   The
    total value of the 50-cent coins is $4.40 more than the total value of the
    20-cent coins.   How many $1 coins does Mr Lee have?

                                        Ans:_____ [3]

9   Town P was exactly halfway between Town M and Town N.   At 08 00, Nancy started travelling from Town M to Town N while Seo Joon started travelling from Town N to Town M.   Nancy travelled at 50 m/min while Seo Joon travelled at 80 m/min.   They did not change their speeds throughout the journey.   When they passed each other, their distance from Town P was 120 m.   At what time did Seo Joon reach Town M?

Ans:_ _____ [3]

10 Ashley and Wei Shen have the mass of 43.3 kg each.   The mass of Bernadette is 1.8 kg less than the average mass of Ashley, Wei Shen and Bernadette.   Find the total mass of Ashley, Wei Shen and Bernadette.

Ans:_ _____ [3]

11   In the figure below, EBCD is a trapezium.   ED is parallel to BC.
$\angle FAB = 74°$ and $\angle EBC = 113°$.   Find the sum of $\angle w$, $\angle x$, $\angle y$ and $\angle z$.
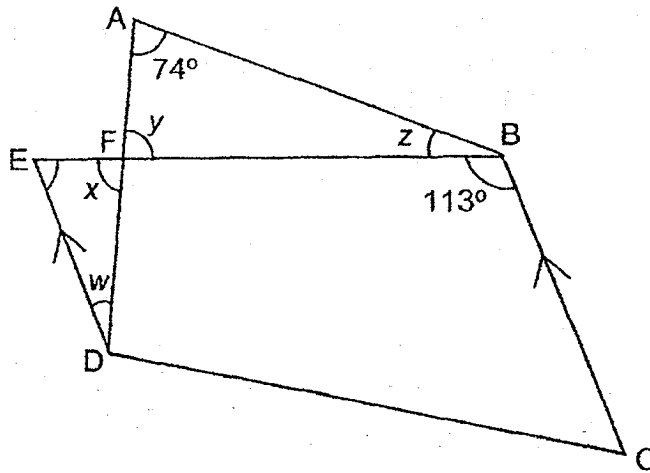
Ans:_____ [3]

12   Mdm Ler, Mr Chan and Mdm Ng bought some blue and some yellow highlighters. Each blue highlighter cost $0.30 more than each yellow highlighter. The table below shows number of highlighters each of them bought for each colour.

	Number of blue highlighters bought	Number of yellow highlighters bought
Mdm Ler	10	17
Mr Chan	7	20
Mdm Ng	12	15

(a) Mdm Ng spent an equal amount of money on the blue highlighters and on the yellow highlighters. How much did each blue highlighter cost?

(b) Find the difference between Mdm Ler's total spending on the highlighters and Mr Chan's total spending on the highlighters.

Ans: (a) _____ [2]

(b) _____ [2]

13   At a florist, there was a total of 3616 orchids, tulips and roses. The ratio of the number of orchids to the number of tulips was 3 : 5. After 40% of the orchids, $\frac{1}{5}$ of the tulips and 25% of the roses were sold, there were 2644 flowers left in the end. How many orchids were there in the florist at first?

Ans: _____ [4]

14   Jonathan had five identical cuboids.   The volume of each cuboid is
     675 cm³. He stacked the five cuboids on top of one another neatly to
     form a big cube as shown below.
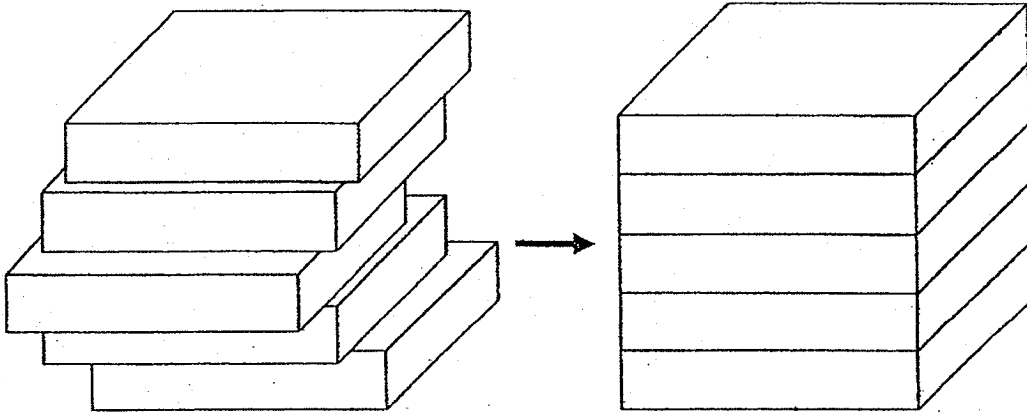
     He then took one of the five cuboids and dipped it into a pail of red
     paint.   Find the area of the cuboid that was painted red.

                                              Ans:_____ [4]

15   The line graph below shows the number of pens sold in a bookstore each month from July to December in 2017.

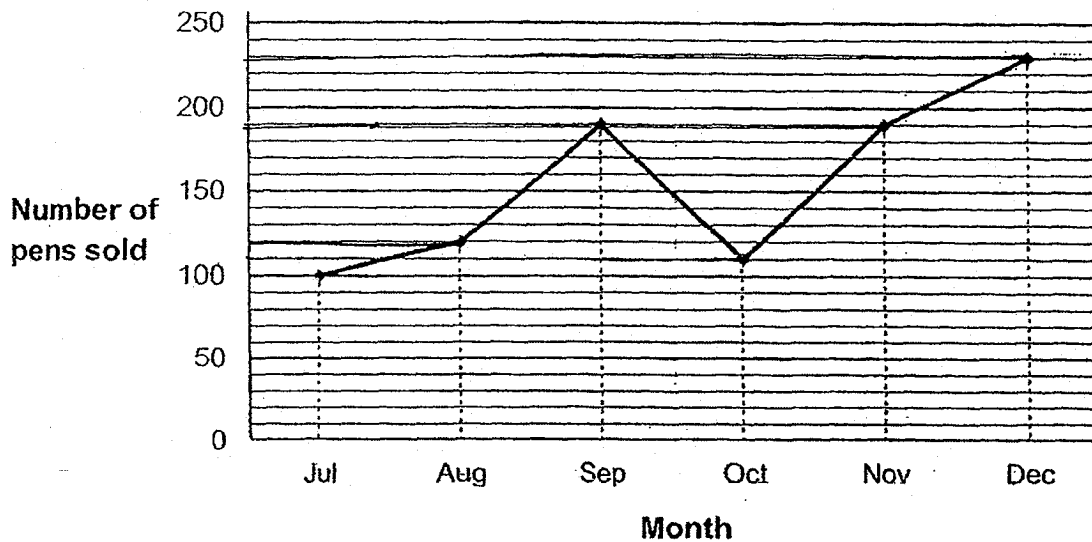(a)   In which two months were the number of pens sold the same?

(b)   Find the total number of pens sold **from August to** November.

(c)   Each statement below is either true, false or not possible to tell from the information given in the line graph.   For each statement, put a (✓) in the correct column.

Statement	True	False	Not Possible to Tell
The increase in the number of pens sold from June to July was less than the increase in the number of pens sold from August to September.			
The number of pens sold in July was three times the number of pens sold in May.			

[2]

Ans: (a) _____ [1]

        (b) _____ [2]

16. The perimeter of rectangle ABCD is 12 cm more than that of rectangle AMND. The area of rectangle MBCN is 54 cm².
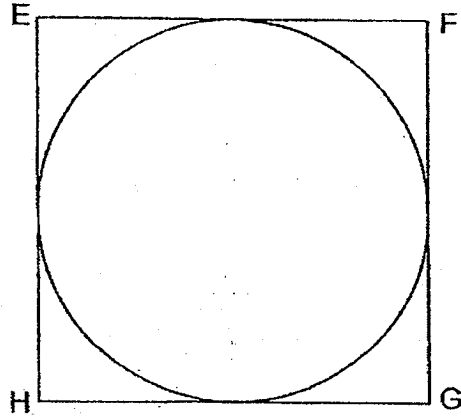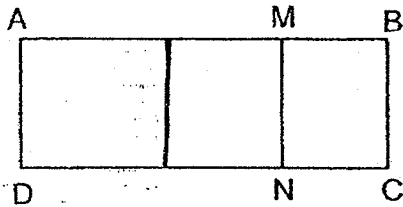
(a) Find the length of AD.

(b) The perimeter of square EFGH is 12 times the length of AD.
Use the calculator value of π to find the area of the circle which touches the 4 sides of square EFGH, correct to 1 decimal place.

Ans: (a) _____ [2]

(b) _____ [3]

17   Rectangular tanks A and B contained some water. The height of the water level in tank A was equal to that in tank B at first. Tank A had a base area of 3400 cm^2 and Tank B had a base area of 850 cm2
8500 cm^3 of water was poured out from Tank B and the height of the water level decreased by 40% of Tank B
Some water was added into Tank A and the height of the water level increased by 80% in Tank A

(a) Find the total amount of water in the two tanks in the end.

(b) Some water was then transferred from Tank A to Tank B without spilling until the height of the water level in both tanks was the same again. What was the height of the new water level in each tank?

Ans: (a) _____ [3]

(b) _____ [2]

_____

End of Paper

EXAM PAPER 2018

LEVEL   :   PRIMARY 6
SCHOOL   :   NANYANG PRIMARY SCHOOL
SUBJECT   :   MATHEMATICS
TERM   :   PRELIM

PAPER 1

BOOKLET A

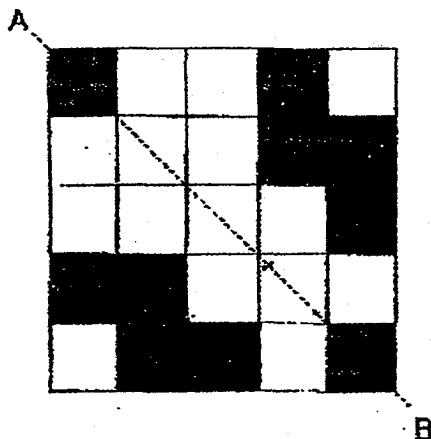| Q1	Q2	Q3	Q4	Q5	Q6	Q7
3	4	2	1	2	4	3
Q8	Q9	Q10	Q11	Q12	Q13	Q14
4	4	3	4	4	4	1
Q15						
2						

BOOKLET B

Q16. $\frac{6}{24} = \frac{1}{4}$

Ans: $\frac{1}{4}$

Q17.   267cm = 2.67m

Ans: 2.67m

Q18.

Q19.   Ans: 12

Q20. $240 \div 6 = 40$
       Ans: Cuboid B

Q21.   <u>16</u>   <u>20</u>
       1×16 1×20
       2×8 2×10
       4×4 4×5
       Ans : 3

Q22 $\$31.70 + \$0.50 = \$32.20$
       $\$31.70 \times 10 + \$317$
       Ans: a) $\$32.20$
              b) $\$317$

Q23. $\dfrac{30}{120} \times 100 = 25$
       $150 - 120 = 30$
       Ans: 25%

Q24.   8.30am to 12am = 3hrs 30 mins
       $7 \times \$0.60 = \$4.20$
       Ans: $4.20

Q25. $110 - 2 = 108$
       $108 \div 6 = 18$
       Ans: 18

Q26. $\dfrac{1}{4} = \dfrac{5}{20}$
       $1 - \dfrac{1}{4} = \dfrac{3}{4}$ $3 \times 4 = 12$
       $\dfrac{3}{4} = \dfrac{15}{20}$ $36 \div 12 = 3$
       $\dfrac{15}{20} \div \dfrac{5}{1} = \dfrac{3}{20}$ $3 \times 20 = 60$
       Ans: 60

Q27. $\dfrac{3}{5} + \dfrac{5}{7} + \dfrac{3}{5} =$ $\dfrac{21}{35} + \dfrac{25}{35} + \dfrac{21}{35}$

$= \dfrac{67}{89}$

$= 1\dfrac{32}{35}$

Ans: $1\dfrac{32}{35}$ m

Q28. $\$y + \$(y + 14) = \$(2y + 14)$

$\$68 - \$14 = \$54$

$\$54 \div 2 = \$27$

Ans: $27

Q29. $180^0 - 70^0 - 70^0 = 32^0$

$90^0 - 32^0 = 58^0$

Ans: 58^0

Q30. $180^0 - 55^0 - 66^0 = 59^0$

$59^0 + 52^0 = 111^0$

$180^0 - 111^0 = 69^0$

Ans: 69^0

PAPER 2

Q1. $(4k + 6) + k = (5k + 6)$

$(5k + 6) \div 3 = (\frac{5k+6}{3})$

Ans: $(\frac{5k+6}{3})$

Q2. $\$617.10 \div 85 = \$7.26$

$\$7.26 \times 100 = \$726$

Ans: $276

Q3. In 1 minute,

Tap A fills $\frac{1}{12}$ of the tank.

Tap B fills $\frac{1}{8}$ of the tank.

Taps A and B fill $\frac{5}{24}$ of the tank.

Time taken $= \frac{1}{2} \div \frac{5}{24}$

$= \frac{1}{2} \times \frac{24}{5}$

$= 2.4$min

Q4. $4 \times 9 = 36$

$\frac{8}{36} + \frac{4}{36} = \frac{12}{36}$

$= \frac{1}{3}$

Ans : $\frac{1}{3}$
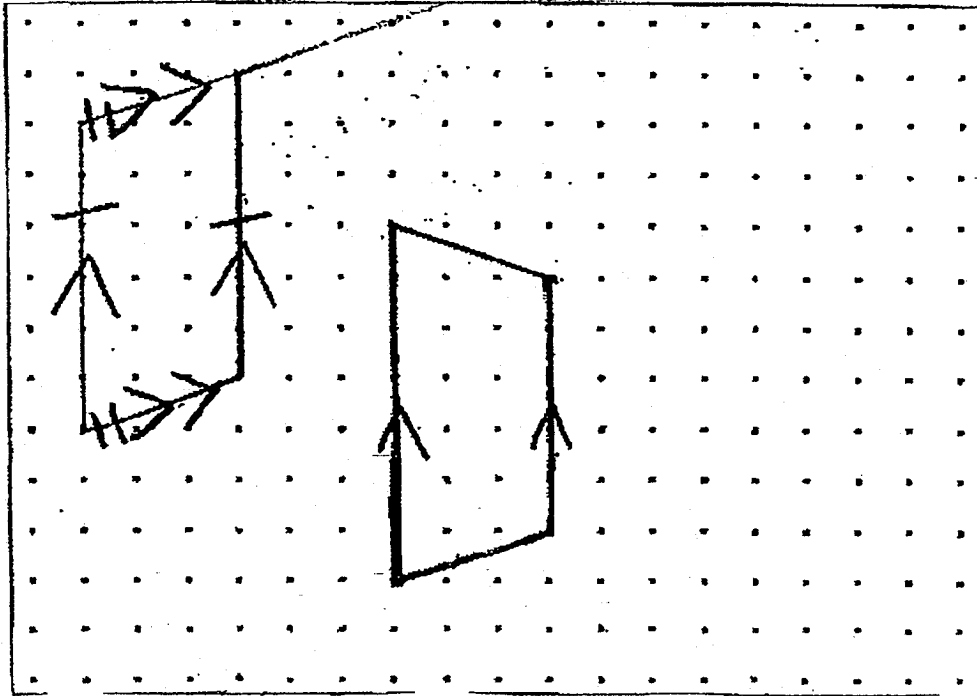
Q5. $30 \times 3 = 90$

$90 - 10 - 11 = 69$

$69 - 10 = 59$

Ans: 59

Q6.

Ans: c) 108^0

Q7. $90^0 - 38^0 = 52^0$

$180^0 - 78^0 = 120^0$

$120^0 \div 2 = 51^0$

$90^0 - 51^0 = 39^0$

$180^0 - 39^0 - 52^0 = 89^0$

Ans: 89^0

Q8.

No. of $1 dollar coins	Total value	No. of 20 cent coins	Total value	No. of 50-cent coins	Total value	Difference in values of 20-cent coins and 50-cent coins	Check
6	$6	3	$0.60	27	$13.50	$12.90	×
12	$12	6	$1.20	18	$9	$7.80	×
16	$18	8	$1.60	12	$8	$4.40	√

Ans: 16

Q9. $(120 \times 2) \div (80 - 50) = 8$

$8 \times (50 + 80) = 1040$

$1040 \div 80 = 13$

Ans: 08 13

Q10. $43.3 \times 2 = 86.6$

$86.6 - 1.8 = 84.8$

$84.8 \div 2 = 42.4$

$42.4 \times 3 = 127.2$

Q11. $180° - 74° = 106° (\angle y + \angle z)$

$180° - 113° = 67°$

$180° - 67° = 113° (\angle x + \angle w)$

$113° + 106° = 219°$

Q12. (a) Let the cost of the blue and yellow highlighter be 1u and 1y respectively,

$1u - \$0.30 = 1y$

$12u = 15y$

$12u = 15(1u - \$0.30)$

$12u = 15u - \$4.50$

$3u = \$4.50$

$1u = \$1.50$

(b) $(\$1.50 \times 10) + (\$1.20 \times 17) = \$35.40$

$(\$1.50 \times 7) + (\$1.20 \times 20) = \$34.50$

$\$35.40 - \$34.50 = \$0.90$

Q13. $15u + 25u + 4p = 3616$

$40u + 4p = 3616$

$120u + 12p = 10848$

$9u + 20u + 3p = 2644$

$29u + 3p = 2644$

$116u + 12p = 10576$

$120u - 116u = 4u$

$4u = 10848 - 10576$

$\quad = 272$

$1u = 68$

$68 \times 15 = 1020$

Q14. $675 \times 5 = 3375$

$\sqrt[3]{3375} = 15$

$15 \div 5 = 3$

$675 \div 3 = 225$

$3 \times 15 = 45$

$45 \times 4 = 180$

$15 \times 15 = 225$

$225 \times 2 = 450$

$450 + 180 = 630$

Q15. (a) September and November

(b) $120 + 190 + 110 + 190 = 610$

(c)

Statement	True	False	Not Possible to Tell
The increase in the number of pens sold from June to July was less than the increase in the number of pens sold from August to September.			v
The number of pens sold in July was three times the number of pens sold in May.		v.	

Q16. (a) $12 \div 2 = 6$

$54 \div 6 = 9$

(b) $9 \times 12 = 108$

$108 \div 4 = 27$

$27 \div 2 = 13.5$

$\pi \times 13.5 \times 13.5 = 572.6$

Q17. (a) 40% of B = 8500

100% of B = (8500 ÷ 40) × 100

= 21250

60% of B = (8500 ÷ 40) × 60

= 12750

21250 ÷ 850 = 25

25 × 3400 = 85000

85000 ÷ 100 × 180 = 15300

12750 + 153   = 165750

(b) 165750 ÷ (3400 ÷ 850) = 39