# SEMESTRAL ASSESSMENT 1
# MATHEMATICS (PAPER 1)
# PRIMARY 6

Date: 9th May 2016

Duration: 50 min

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**SECTION A (20 marks)**

**Questions 1 to 10 carry 1 mark each. Question 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 your answer (1, 2, 3 or 4) on the OAS provided. All diagrams are not drawn to scale.**

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1. In 397 062, the digit 9 is in the _____ place.

   (1) hundreds

   (2) thousands

   (3) ten thousands

   (4) hundred thousands

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

$$\frac{7}{11}, \quad \frac{5}{7}, \quad \frac{7}{10}$$

(1) $\frac{5}{7}, \frac{7}{10}, \frac{7}{11}$

(2) $\frac{7}{11}, \frac{7}{10}, \frac{5}{7}$

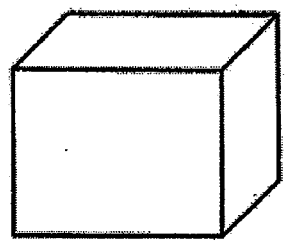
(3) $\frac{7}{11}, \frac{5}{7}, \frac{7}{10}$

(4) $\frac{7}{10}, \frac{7}{11}, \frac{5}{7}$



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3. Melvin wants to fill the 20-cm cubic tank below to its brim using some 500-ml bottles of water.





500-ml bottle of water

How many bottles of water does he need to fill the tank to its brim?

(1) 8

(2) 16

(3) 160

(4) 520

4. If k = 9, what is the value of $4k - \frac{3+k}{2}$ ?

(1) 6

(2) 12

(3) 21

(4) 30

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5. In a pet shop, $\frac{3}{4}$ of the pets are fish. The rest are either rabbits or puppies.

There are two times as many as rabbits as puppies.

What is the ratio of the number of fish to the number of puppies?

(1) 3 : 1

(2) 3 : 2

(3) 9 : 1

(4) 9 : 2

6. What is the missing fraction in the box?

$$3\frac{4}{5} = \frac{13}{5} + \square$$

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

(2) $1\frac{2}{5}$

(3) $1\frac{3}{5}$

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

7. Express $2\frac{2}{5}$ as a decimal.

(1) 2.25

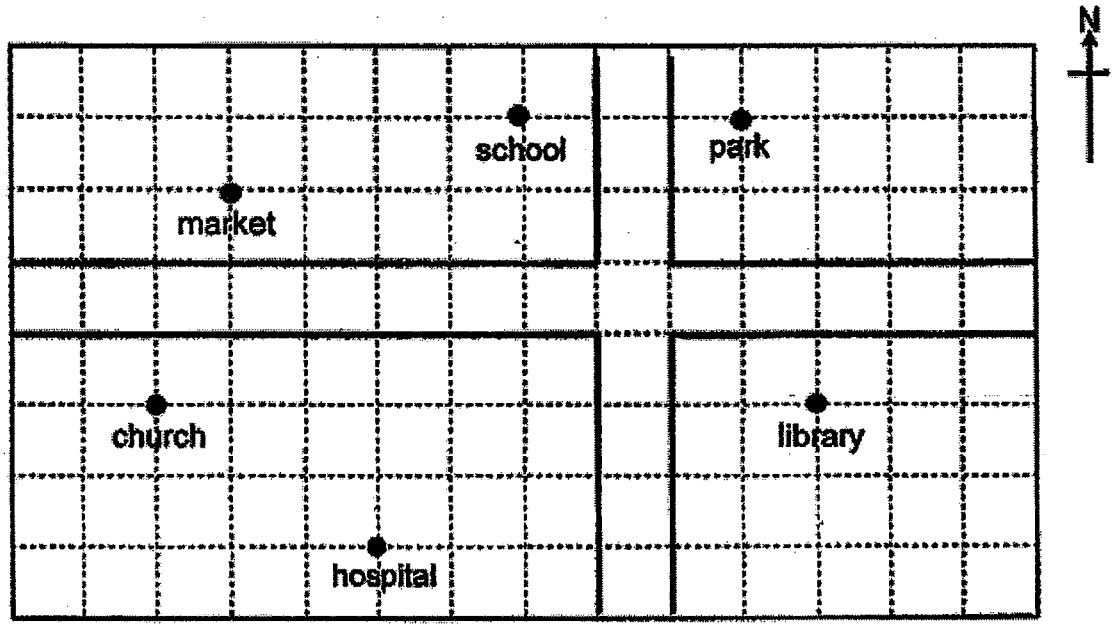
(2) 2.40

(3) 2.52

(4) 2.60

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8. The diagram below shows the map of a town.




The school is North-West of the _____

(1) park

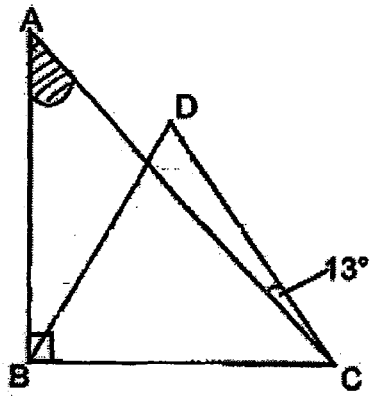
(2) library

(3) church

(4) market

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9. In the figure below, ABC is a right-angled triangle and BCD is an equilateral triangle. $\angle ACD = 13°$. Find $\angle BAC$.




(1) 43°

(2) 45°

(3) 73°

(4) 77°

10. There were 40 pupils in class 6H and 28 of them were boys.
Find the percentage difference between the boys and girls in the class.

(1) 50%

(2) 20%

(3) 60%

(4) 40%

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11. I am a number less than 40.
I am a common multiple of 6 and 9 and a factor of 54.
What number am I?

(1) 6

(2) 18

(3) 3

(4) 27

12. $4.875 = 4 + 8 \times \frac{1}{10} + 5 \times \frac{1}{100} + \square \times \frac{1}{1000}$

What is the number in the box?

(1) 5

(2) 7

(3) 25

(4) 75

13. Chloe had a box of blue and red marbles. $\frac{2}{5}$ of the marbles were blue.
Her brother took away half of the blue marbles from the box.
Find the percentage of the red marbles in the end.

(1) 25%

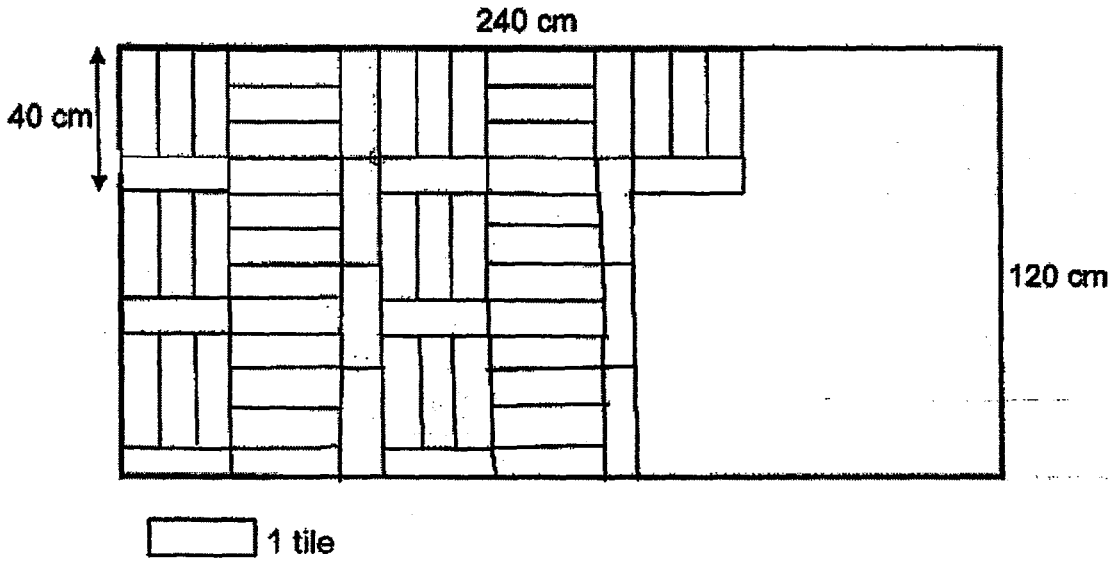
(2) 20%

(3) 50%

(4) 75%

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14. Mr. Lim covered a rectangular floor, measuring 240 cm long by 120 cm wide, completely with identical rectangular tiles by using the tiling pattern shown below.




How many tile did he use altogether?

(1) 18

(2) 32

(3) 64

(4) 96

15. The ratio of men to women at a party is 5 : 3. The ratio of children to women at the same party is 3 : 2. What is the ratio of the number of men to the number of children?

(1) 3 : 5

(2) 5 : 3

(3) 9 : 10

(4) 10 : 9



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**SECTION B (20 marks)**

**Questions 16 to 25 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. Answers in fractions or ratio must be expressed in the simplest form.**

16. **The average score of Sally, Kenny and Yasmine is 35.**
    **The total score of Sally and Yasmine is 45.**
    **What is Kenny's score?**

**Ans:** _____

17. **Find the value of 72 ÷ 6 x 2 + (13 – 11).**

**Ans:** _____

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18. Mrs Chan brought some fruits. $\frac{4}{9}$ of the fruits were apples and the rest were pears. $\frac{7}{12}$ of the apples were red apples and the rest were green apples.

What fraction of the fruits were green apples?

Ans: _____

19. A green ribbon is $\frac{3}{5}$ m long. It is $\frac{1}{3}$ m longer than a yellow ribbon.

Find the total length of the 2 ribbons.

Ans: _____ m

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20. Convert 37 042 g to kilograms.

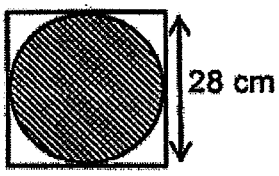
Ans: _____kg

21. Express 1.375 as a mixed number in its simplest form.

Ans: _____

22. The diagram below is made up of a shaded circle and a square.

Find the circumference of the circle. (take $\pi = \frac{22}{7}$)




Ans: _____cm

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23. Mr Maju had $100. He bought 8 books at $x each. He donated half of his remaining money to charity. How much did he have left?

Ans : $_____

24. In a marathon, James ran a total distance of 42 km in 5 hours.
What was his average speed?

Ans: _____km / h

25. Mei Fen and her friends watched a movie that lasted 127 minutes.
The movie ended at 11.04 p.m..
What time did the movie start? Express your answer in 24-hour clock.

Ans: _____

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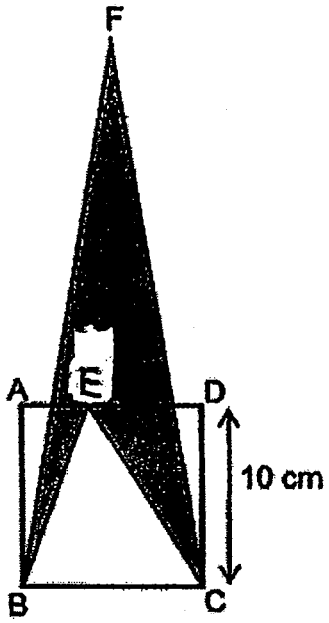
**Questions 26 to 30 carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the space provided.**
**For questions which require units, give your answers in the units stated.**
**All diagrams are not drawn to scale. Answers in fractions or ratio must be expressed in the simplest form.**

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26. The figure below is made up of a square ABCD, triangle BCE and triangle BCF.

The height of triangle BCF is 3 times the height of triangle BCE.

The length of the square is 10 cm. Find the value of the shaded area.




Ans: _____ $cm^2$

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27. 44 lanterns were hung at an equal distance of 11 m apart from one another along a road. What is the distance between the 15th and 30th lantern?

Ans: _____m

28. A tap takes a day to fill up a 2-m cube.
How long does it take 3 taps to fill up a 6-m cube when they are turned on at the same time, assuming that the rate of flow for the 3 taps is the same?

Ans: _____

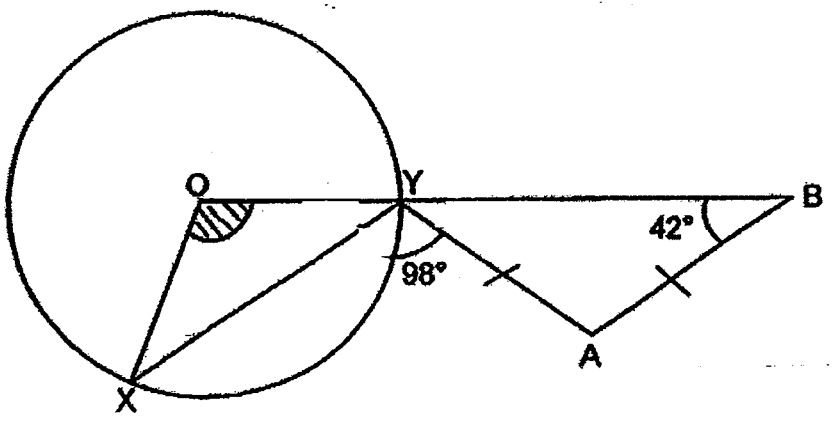
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29. May keeps the same number of 50-cent and 20-cent coins in a box.
The total value of money in the box is $ 9.80.
What is the total number of coins in the box?

Ans: _____

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30. In the diagram below, O is the centre of the circle and OYB is a straight line. ABY is an isosceles triangle. $\angle XYA = 98°$ and $\angle ABY = 42°$
Find $\angle XOY$.




Ans: _____

**End of Paper-**
**☺ Please check your work carefully ☺**

Setters : Darren Lau, Ho Kai Huat, Eliza

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# SEMESTRAL ASSESSMENT 1
# MATHEMATICS (PAPER 2)
# PRIMARY 6

Date: 9th May 2016

Duration: 1 h 40 min

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

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1. At a performance, there are 246 guests. There are 58 more women than men.
What is the ratio of the number of women to the number of men?

Ans: _____ [2]

2. Germaine had $\$8y$ at first. She bought 3 books at $\$y$ each. Then her mother gave her \$6. Finally, she bought 3 pens and had no money left.
What is the cost of each pen in terms of $y$?

Ans: \$_____ [2]

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3. Karen took $\frac{1}{3}$ h to walk from her house to her office. Her average speed was 45 m/min. What was the distance between her house and her office? Express your answer in kilometres.

Ans: _____km [2]

4. Claire has $241 more than Mary. $\frac{2}{3}$ of Claire's money is equal to $\frac{3}{4}$ of Mary's money. How much money do they have altogether?

Ans: $_____ [2]

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5. Miss Pek bought a laptop at $1440.22 inclusive of 7% GST.
Find the amount of the GST.

Ans: $ _____ [2]

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For questions 6 to 18, show your working clearly in the space provided for each question and write your answers in the spaces provided.
Figures are not drawn to scale.
The number of marks available is shown in the brackets [ ] at the end of each question or part-question. (50 marks)

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6. The number of chairs is two times as many as the number of tables in a ballroom. After 147 chairs and 147 tables are added into the ballroom, the ratio of the number of chairs to the number of tables is 7 : 5.
How many tables are there in the end?

Ans : _____ [3]

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7. At a factory, the ratio of the number of bags to the total number of pouches and wallets produced in a day is 2 : 7. The ratio of the total number of bags and pouches to the number of wallets produced in a day is 5 : 1.
Given that 3454 pouches are produced, what is the total number of items produced at the factory in a day?

Ans: _____ [4]

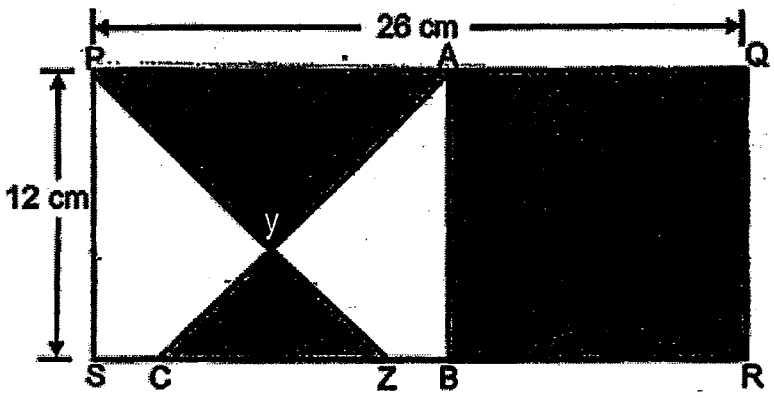
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8. A box can either contain 20 volleyballs or 15 basketballs.
When the box is packed with 12 volleyballs and 2 basketballs, how many more basketballs can be packed into the box?

Ans: _____ [3]

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9. In rectangle PQRS below, triangles PSZ and ABC are identical. The area of triangle CYZ is 28 $cm^2$. PS = SZ = AB = BC. Find the area of the shaded parts.




Ans: _____ [3]

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10. Jane ran a total distance of 96 036 m during a two-day charity run.
She ran 12% further on the 2nd day than on the 1st day.
Find the distance that Jane had run on the 2nd day.

Ans : _____ [3]

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11. For the first $\frac{2}{3}$ of the journey, Mr Lim drove at a speed of 80 km/h.

For the remaining 30 km of the journey, he drove at a speed of 60 km/h.
What was his average speed for the whole journey?

Ans: _____ [3]

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12. Study the patterns in the figures below.

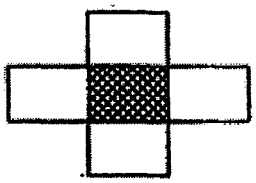


Figure 1

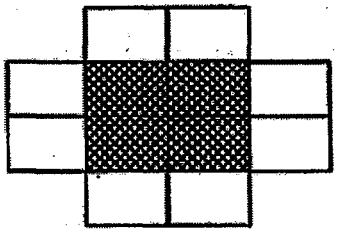


Figure 2

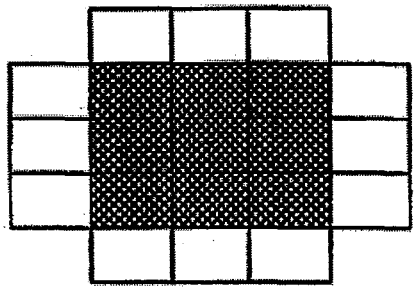


Figure 3

| Figure | Number of shaded boxes | Number of unshaded boxes | Total number of boxes |
|---|---|---|---|
| 1 | 1 | 4 | 5 |
| 2 | 4 | 8 | 12 |
| 3 | 9 | 12 | 21 |

a) How many shaded boxes will there be in Figure 5?

b) Which figure will have 48 unshaded boxes?

c) What is the total number of boxes in Figure 15?

Ans: (a) _____ [1]

(b) Figure _____ [1]

(c) _____ [3]

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13. Some children were at a party. If 45 boys left the party, the ratio of the number of boys to the number of girls would become 5 : 3. If 38 girls left the party, the ratio of the number of boys to the number of girls would became 2 : 1.
How many children were at the party?

Ans: _____ [4]

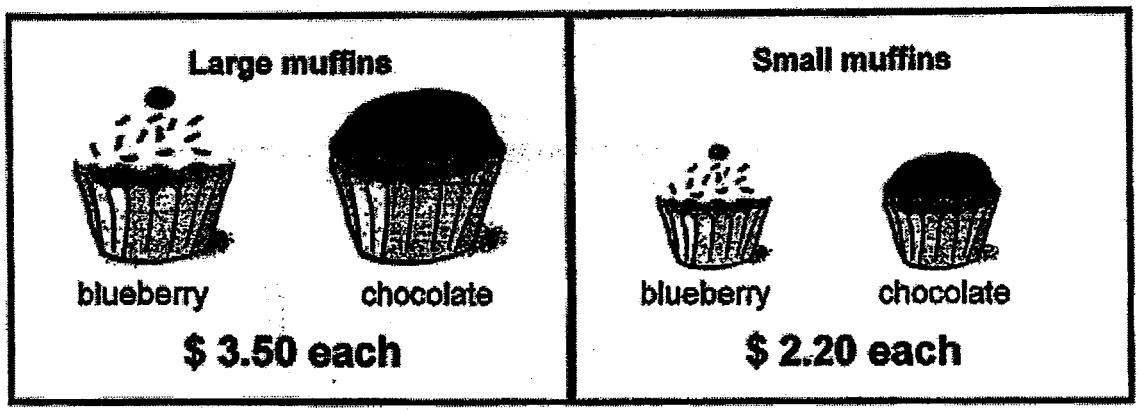
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14. Madam Koh paid $715 for some bowls and plates. She paid $533 more for the bowls than the plates. The number of bowls she bought was 4 times as many as the number of plates. Each plate cost $7.
Find the number of bowls Madam Koh bought.

Ans: _____ [4]

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15. The diagram below shows the price of muffins of different sizes and flavours.




Mrs Khoo bought an equal number of large blueberry and large chocolate muffins and only some small chocolate muffins for her son's birthday party.
She bought 112 muffins altogether and paid $340 in total.

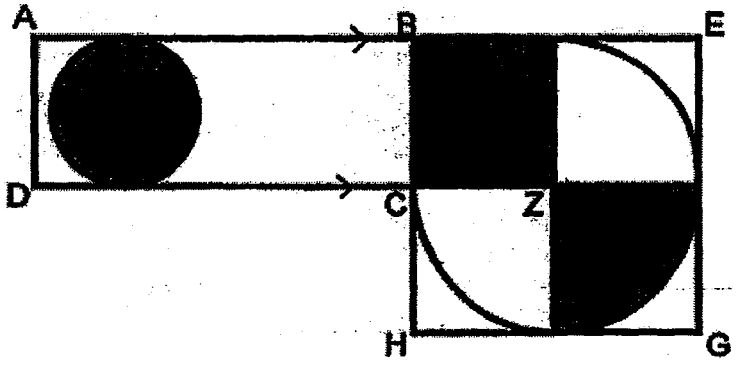
What was the difference in the number of large chocolate muffins and small chocolate muffins Mrs Khoo bought?

Ans: _____ [4]

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16. The figure below is formed by a shaded circle Y, rectangle ABCD and square BEGH. AE and DZ are parallel to each other and Z is the centre of the circle in the square. The breadth of rectangle ABCD is $\frac{1}{3}$ of its length.

The area of square BEGH is 144 cm$^2$.




Find the following.

(a) Radius of circle Y

(b) Total area of the unshaded parts in the figure. (Take $\pi$ = 3.14)

Ans: (a)_____ [2]

(b)_____ [3]

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17. Elaine had prepared 4573 butter and chocolate cookies altogether for a sale. At the end of the day, 50% of the butter cookies and 60% of the chocolate cookies were sold. She was left with 2032 cookies.
How many chocolate cookies did Elaine prepare at first?

Ans: _____ [4]

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18. Box A has 128 apples more than Box B.

Joel moved 25% of the apples from Box A to Box B.

Then, he moved $\frac{1}{8}$ of the apples in Box B to an empty Box C.

In the end, Box C will have 149 apples less than the remaining apples in Box A.

(a) Find the number of apples in Box C.

(b) Find the number of apples in Box A at first.

Ans : (a) _____ [4]

(b) _____ [1]

**End of Paper**
**Please check your work carefully ☺**

Setters : Darren Lau, Ho Kai Huat, Eliza Tang

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# ANSWER SHEET

**EXAM PAPER 2016**

**SCHOOL : REFFLES GIRLS'**

**SUBJECT : MATHEMATICS**

**TERM : SA1**

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

16)60 + 45 = 105

105 ÷ 3 = 35

S + K + y = 35 x 3 = 105

S + K = 45

K = 105 – 45 = 60

17)72 ÷ 6 x 2 + (13 – 11)

= 72 ÷ 6 x 2 + 2

= 12 x 2 + 2

= 26

18)5/12 x 1/9 = 5/27

19)G → 3/5m =9/15m

Y → 3/5m – 1/3 m = 9/15m – 5/15m

= 4/15

9/15m + 4/15m = 13/15m

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20)1kg = 1000g

37042 ÷ 1000 = 37.042kg

21)1.375 = 1375/1000

= 175/200

= 115/40

= 13/8

22)22/7 x 28 = 88cm

23)8 x X = 8X

(100 – 8X) ÷ 2 = $(50 – 4X)

24)42 ÷ 5 = 82/5

=8.4km/h

25)20 57

26)△BCF→ ½ x 10 x 30 = 150

△BEC→ ½ x 10 x 10 = 50

150 – 50 = 100cm2

27)180° – 98° – 42°

= 180° – 140° = 40°

180° – 40° – 40° = 100°.

28)30 – 15 = 15

15 x 11 = 15 x 10 + 15 x 1

= 150 + 15 = 165m

29)6 x 6 x 6 = 216

3 x 1/3 = 1

216 ÷ 1 = 216 h

30)0.5 + 0.2 = 0.7

9.8 ÷ 0.7 = 14

14 x 2 = 28

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## Paper 2

1)246 – 58 = 188

188 ÷ 2 = 94 (M)

94 + 58 = 152 (W)

W : M

152 : 94

76 : 47

2)3 x y = 3y

8y – 3y = 5y

(5y + 6) ÷ 3 = $(5y+6/3)

3)1/3 h = 20 mins

20 x 45 = 900

900m = 0.9 km

4) c = 9u
m = 8u } 9u + 8u = 17u

9u – 8u = 1u

1u = 241

1u = 241

17u = 17 x 241 = $4097

5)107% → 1440.22

1% → 1440.22 ÷ 107 = 13.46

7% → 7 x 13.46 = $94.22

6)7u – 4u = 3u

3u = 147

1u = 147 ÷ 3 = 49

5u = 5 x 49 = 245

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7) b : p : w

12 : 33 : 9

5652 ÷ 18 = 314

314 x 11 = 3454

54u – 12u – 9u = 33u

3454 ÷ 33 = 104 2/3

54 x 104 2/3 = 5652

8) 20v = 15b ÷5

4v = 3b

12v = 9b x3

12v + 2b = 9b + 2b = 11b

15b – 11b = 4b

9) ½ x 12 x 12 = 72

72 – 28 = 44

44 x 2 = 88

26 x 12 = 312

312 – 88 = 224cm2

10) 1st → 25u

2nd → 28u

28u + 25u = 53u

25u x 112% = 28u

53u = 96036

1u = 96036 ÷ 53 = 1812

28u = 28 x 1812 = 50736m

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11)1/3 of D→30

2/3 of D→2 x 30 – 60

1st→60 ÷ 80 = ¾

2nd→30 ÷ 60 = ½ =2/4

¾ + 2/4 = 5/4

= 1¼ (total time)

3 x 30 = 90 ( Total distance)

90 ÷ 1¼ = 72km/h

12)a)5 x 5 = 25

b)48 ÷ 4 = 12

c)15 x 15 = 225

15 x 4 = 60

225 + 60 = 285

13)5u + 45 – 6u – 76

5u + 45 + 76 = 6u

5u + 121 = 6u

121 = 6u – 5u

121 = 1u ] x8

968 = 8u ]

968 + 45 = 1013

14)715 – 533 = 182

182 ÷ 2 = 91

7u→91

1u→91 ÷ 7 = 13

4u→4 x 13 = 52

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15)112 x 3.5 = 392

392 – 340 = 52

3.5 – 2.2 = 1.3

52 ÷ 1.3 = 40 (s)

112 – 40 = 72 (L)

72 ÷ 2 = 36 (Large choco)

40 – 36 = 4

16)a) $\sqrt{144}$ = 12 (2u)

1u = 12 ÷ 2 = 6 ( diameter of cirde y)

6 ÷ 2 = 3

b)total area of figure → 3 x 6 =18

18 x 6 = 108

108 + 144 = 252

Total area of shaded → 3.14 x 3 x 3 = 28.26 (circle y)

6 x 6 =36

¼ x 3.14 x 6 x 6 = 28.26

28.26 + 36 + 28.26 = 92.52

252 – 92.52 = 159.48 $cm_2$

17) ½B + 2/5C = 2032

X2 ⌐ 2/2B +5/5C = 4573

└ 2/2B + 4/5C = 2032 x 2 = 4064

5/5C – 4/5C = 1/5C

1/5C = 4573 – 4064 = 509

C = 509 x 5 = 2545

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18)A→(1u + 128) – ( ¼ u + 32) = ¾ u + 96

B→1u + ¼ u + 32 = 1¼ + 32

(1¼u + 32) – (5/32u + 4) = 1 3/32 u + 28

C→5/32 u + 4

5/32u + 4 + 149 = ¾ u + 96

5/32u + 153 = 24/32 u + 96

5/32u + 153 – 96 = 24/32 u

5/32u + 57 = 24/32 u

57 = 24/32u – 5/32u

57 = 19/32u ÷19

3 = 1/32u

15 = 5/32u x5

15 + 4 = 19

3 x 32 = 96 (1u)

96 + 128 = 224

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