prelim

RAFFLES GIRLS' PRIMARY SCHOOL
PRELIMINARY EXAMINATION
MATHEMATICS (PAPER 1)
PRIMARY 6

Name: _____ ( )

Form Class: P6 _____ Math Teacher: _____

Date: 24 Aug 2017 Duration: 50 min

Your Score	
Paper 1 (Out of 40 marks)	
Paper 2 (Out of 60 marks)	
Overall (Out of 100 marks)	
Parent's Signature	

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 and show all working clearly.
4. **NO** calculator is allowed for this paper.

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SECTION A (20 marks)

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

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1. The value of the digit 4 in 364 798 is _____.

   (1) 40 ones

   (2) 40 tens

   (3) 40 hundreds

   (4) 40 thousands

2. Round off 72 590 to the nearest hundred.

   (1) 72 000

   (2) 72 500

   (3) 72 600

   (4) 73 000

3. Which of the following fractions is equal to $4\frac{5}{8}$?

   (1) $\frac{28}{8}$

   (2) $\frac{32}{8}$

   (3) $\frac{37}{8}$

   (4) $\frac{45}{8}$

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

$$\frac{5}{3} \quad , \quad 1\frac{5}{6} \quad , \quad \frac{11}{9}$$

(1) $\frac{5}{3}$, $\frac{11}{9}$, $1\frac{5}{6}$

(2) $\frac{11}{9}$, $\frac{5}{3}$, $1\frac{5}{6}$

(3) $\frac{11}{9}$, $1\frac{5}{6}$, $\frac{5}{3}$

(4) $1\frac{5}{6}$, $\frac{5}{3}$, $\frac{11}{9}$

5. 6 hundreds, 2 tenths and 4 thousandths is _____.

(1) 620.004
(2) 600.240
(3) 600.204
(4) 600.024

6. Which of the following fractions is nearest to $\frac{1}{7}$?

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

(2) $\frac{1}{10}$

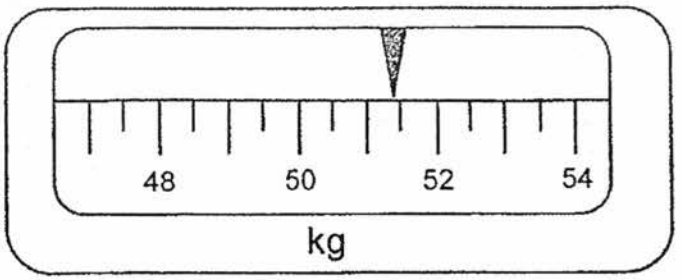
(3) $\frac{3}{20}$

(4) $\frac{7}{50}$

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7. Which of the following is closest to the reading shown on the weighing scale below?



(1) 50.75 kg

(2) 51.25 kg

(3) 51.45 kg

(4) 51.75 kg

8. Which of the following is the same as 7090 m?

(1) 7 km 9 m

(2) 7 km 90 m

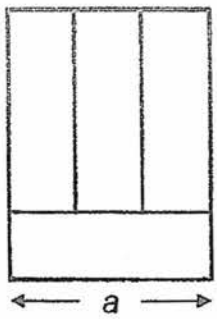
(3) 70 km 9 m

(4) 70 km 90 m

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9. The figure below is made up of 4 identical rectangles. The perimeter of the figure is 28 cm. What is the length of *a*?



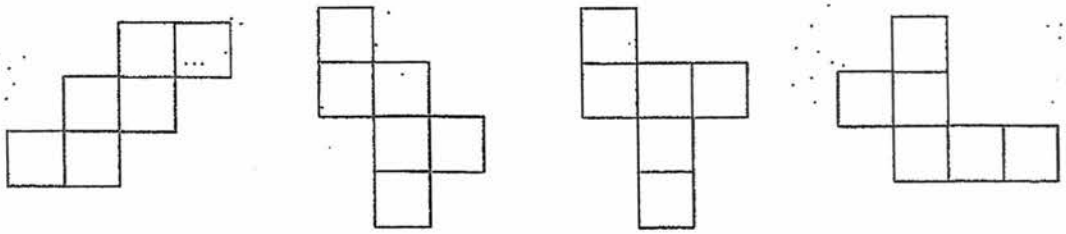
(1) 6 cm

(2) 2 cm

(3) 7 cm

(4) 8 cm

10. Which of the following is not a net of a cube?

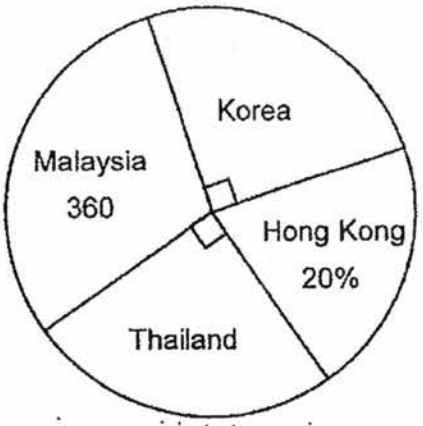


(1) (2) (3) (4)

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11. The pie chart represents the countries visited by a group of children during their school holiday. 20% of the children visited Hong Kong and 360 children visited Malaysia.



How many children visited Thailand?

(1) 190

(2) 200

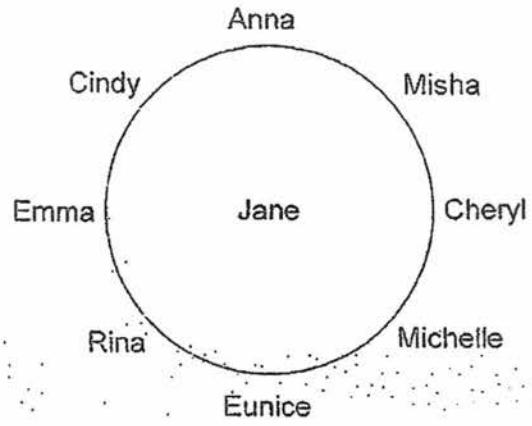
(3) 300

(4) 450

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12. Jane stood at the centre of a circle. Her 8 friends stood around her and spaced themselves out equally as shown below. Jane made a 90° anticlockwise turn followed by a 135° clockwise turn. In the end, Jane was facing Emma. Who was Jane facing at first?



(1) Rina
(2) Cindy
(3) Anna
(4) Misha

13. Jimmy is baking some cookies. In 30 minutes, he can bake 10% of the cookies. After every 2 hours of baking, he stops to rest for 1 hour. How long will Jimmy take to bake 80% of the cookies?

(1) 5 h
(2) 2 h
(3) 7 h
(4) 4 h

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14. Mary had 1360 yellow beads and some green beads at first. After buying 170 red beads, 20% of her beads were green and red. What percentage of the beads were red beads in the end?

(1) 7.5%
(2) 10%
(3) 12.5%
(4) 25%

15. Jenny bought a bag and a wallet during a sale. Each item was given a 10% discount. She paid $450 for the two items. Her savings for the bag was four times the savings on the wallet. What was the price of the bag before the sale?

(1) $40
(2) $50
(3) $100
(4) $400

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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. Arrange the following numbers from the largest to the smallest.

796 800 , 789 604 , 798 600 , 789 406

Ans : _____

17. $\frac{5}{7}$ of a number is 60. What is $\frac{1}{2}$ of the number?

Ans : _____

18. $6.2 = 5.91 - 4.28 +$?

What is the number in the box?

Ans : _____

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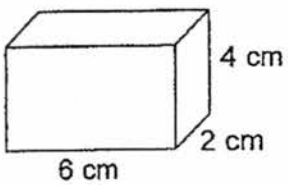
19. Find the value of 26.25 ÷ 300. Express your answer as a decimal.

Ans : _____

20. A movie started screening at 11.15 p.m. It lasted 2 h 20 min.
What time did the movie end?

Ans : _____ a.m.

21. What is the volume of the cuboid shown below?



Ans : _____ cm^3

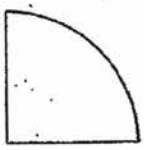
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22. The average age of three pupils is 12 years old. The youngest pupil is 7 years old. What is the average age of the other 2 pupils?

Ans : _____

23. Find the area of the quarter circle below. Take $\pi = 3.14$.



4 cm

Ans : _____ cm^2

24. Mr Tan spent $\frac{2}{5}$ of his salary on food. He spent $\frac{1}{2}$ of his remaining salary on transport. Find the ratio of the amount Mr Tan spent on food to the amount he spent on transport.

Ans : _____

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25. Kevin bought a burger set for lunch and paid $0.91 for 7% GST.
What was the cost of the burger set before GST?

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. Find the value of $\frac{50+2a}{9} \div \frac{14a-3}{5}$ when $a = 2$.

Ans : _____

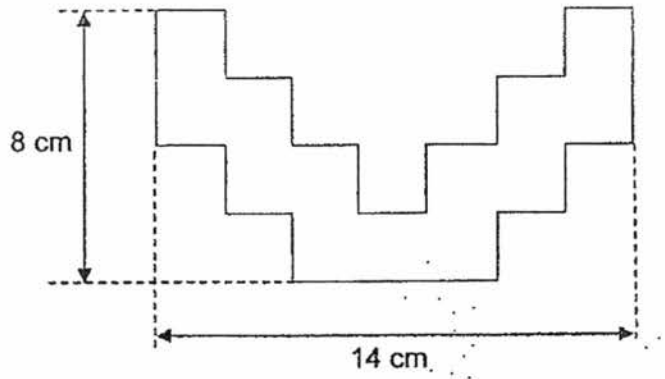
27. Hamid went shopping with a sum of money. After spending $\frac{1}{3}$ of his money on a watch and \$56 on a tie, he was left with $\frac{3}{8}$ of the sum of money he had at first. How much did Hamid spend altogether?

Ans : \$ _____

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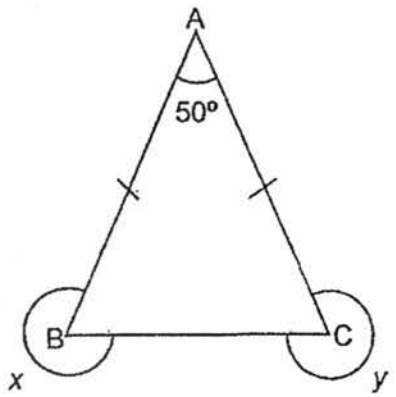
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28. Thirteen square cards of identical size were placed without overlapping to form the composite figure shown below. Find the perimeter of the composite figure.



Ans : _____ cm

29. The figure below, ABC is an isosceles triangle. Find the sum of ∠ x and ∠ y.



Ans : _____ °

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30. Steph and Angie went on a vacation with the same amount of money. Each day, Steph spent $230 while Angie spent $190.
At the end of their vacation, Steph had $240 left while Angie had $720 left.
How many days were they on vacation?

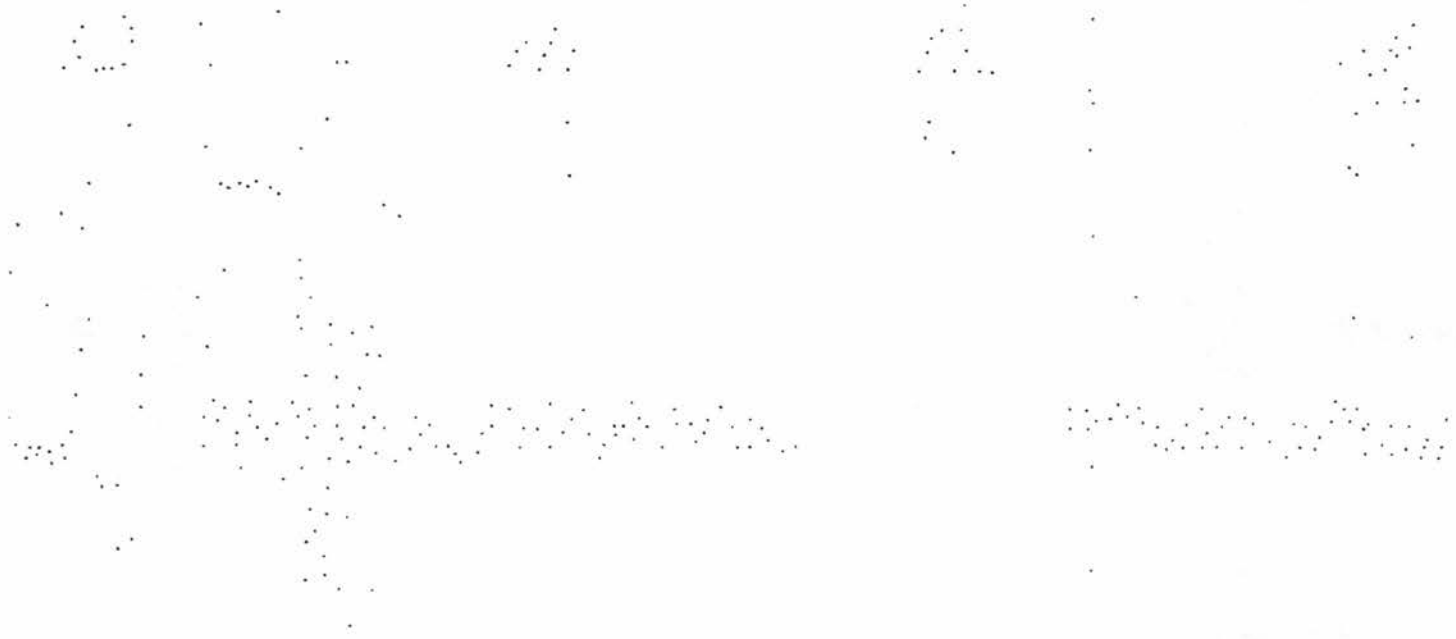
Ans : _____

End of Paper-
☺ Please check your work carefully ☺

Setters : Lim Li Shan, Jacqueline Seto, Seah Nam Sin

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RAFFLES GIRLS' PRIMARY SCHOOL
PRELIMINARY EXAMINATION
MATHEMATICS (PAPER 2)
PRIMARY 6

Name: _____ ( )

Form class: P6_____ Math Teacher: _____

Date: 24 August 2017 Duration: 1 h 40 min

Your Paper 2 Score (Out of 60 marks)	

INSTRUCTIONS TO CANDIDATES

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3. Answer **ALL** questions and show all working clearly.
4. The use of calculator is allowed for this paper.

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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.
For questions which require units, give your answers in the units stated.
All diagrams are not drawn to scale. (10 marks)

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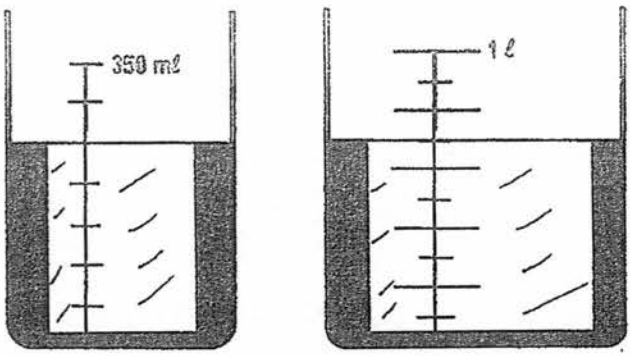
1. Chloe bought $5n$ pens. She packed 8 pens into one box.
After giving away 3 boxes, how many boxes of pens had she left?
Give your answer in terms of n.

Ans : _____

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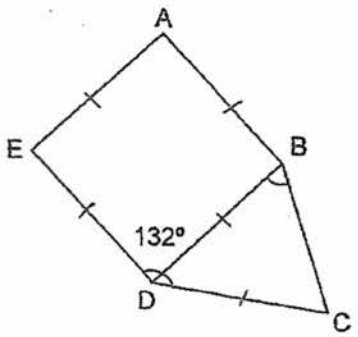
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2. Two containers with some water are shown below. Find the total volume of water in the two containers.



Ans : _____ mℓ

3. In the figure below, ABDE is a square and BCD is an isosceles triangle. Given that ∠ EDC = 132°, find ∠ DBC.



Ans : _____ °

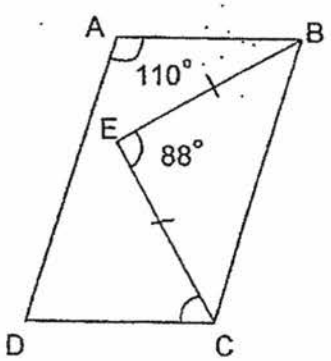
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4. Sally had some bottled drinks. 60% of the bottled drinks were coffee while the rest were tea. She bought more bottles of tea. In the end, 40% of the bottled drinks were coffee. What was the percentage increase in the number of bottles of tea when more bottles of tea were added to the bottled drinks?

Ans : _____%

5. ABCD is a parallelogram, $\angle BAD = 110^\circ$ and EB = EC.
Find $\angle ECD$ when $\angle BEC = 88^\circ$.



Ans : _____°

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For questions 6 to 18, 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. (50 marks)

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6. Three friends are folding paper butterflies to decorate the class noticeboard. To fold one paper butterfly, Carol takes 9 min, Diane takes 6 min and Edna takes only 4 min. They start folding at the same time. How many minutes will they take to fold 285 paper butterflies altogether?

Ans : _____ [3]

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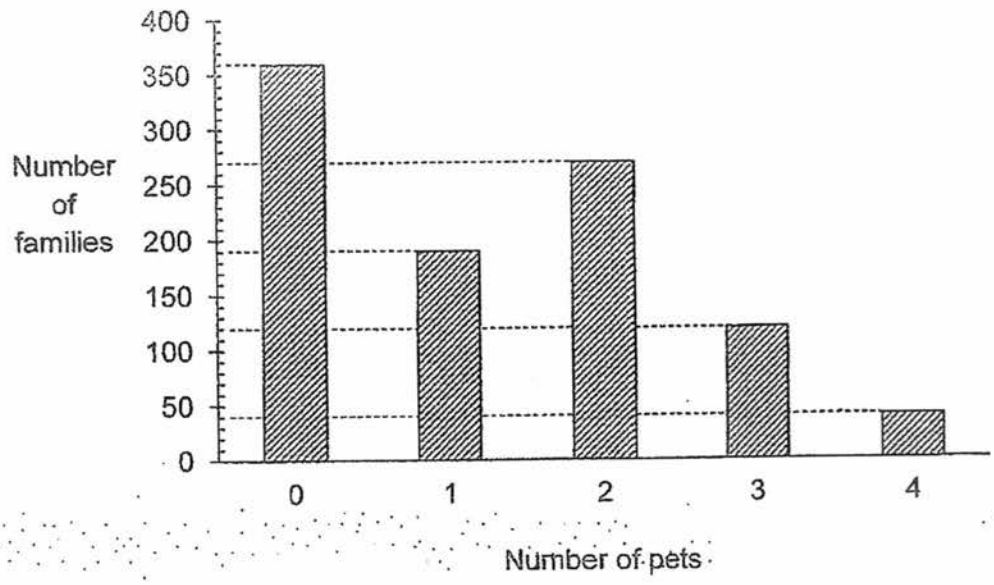
7. At a bakery, 70 more beef pies than chicken pies were baked for the day. After 450 beef pies and 121 chicken pies were sold, there were $\frac{5}{12}$ as many beef pies as chicken pies left. How many pies were baked altogether?

Ans : _____ [3]

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8. The bar graph shows the number of pets owned by families in a neighbourhood.



(a) How many pets are there in the neighbourhood altogether?

(b) What fraction of the families who own pets, have at least 3 pets? Give your answer in the simplest form.

Ans : (a) _____ [1]

(b) _____ [2]

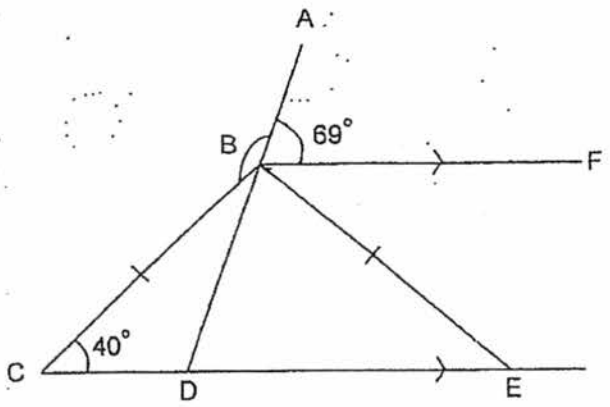
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9. Adam had 110 more marbles than Ben. After Adam lost 129 marbles to Ben in a game, Ben had 5 times as many marbles as Adam. How many marbles did Ben have at first?

Ans : _____ [3]

10. In the figure below, BF is parallel to CE. ABD is a straight line and BCE is an isosceles triangle. Find ∠ ABC.



Ans : _____ [3]

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11. Mrs Lee baked some cookies. She gave $\frac{1}{5}$ of them to her neighbours and packed $\frac{1}{3}$ of the remaining for her son's class party. When she baked another 594 cookies, she found that she now had twice the number of cookies she had baked at first. How many cookies did Mrs Lee give to her neighbours?

Ans : _____ [4]

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12. At a funfair, the ratio of the number of adults to the number of children was 3 : 2. Among the children, the ratio of the number of girls to the number of boys was 4 : 5. Each adult ticket cost $10 and each child ticket cost $6. A total of $21 168 was collected from the ticket sale.

(a) What percentage of the people visiting the funfair were girls? Leave your answer as a fraction in its simplest form.

(b) How many boys visited the funfair?

Ans : (a) _____ [2]

(b) _____ [3]

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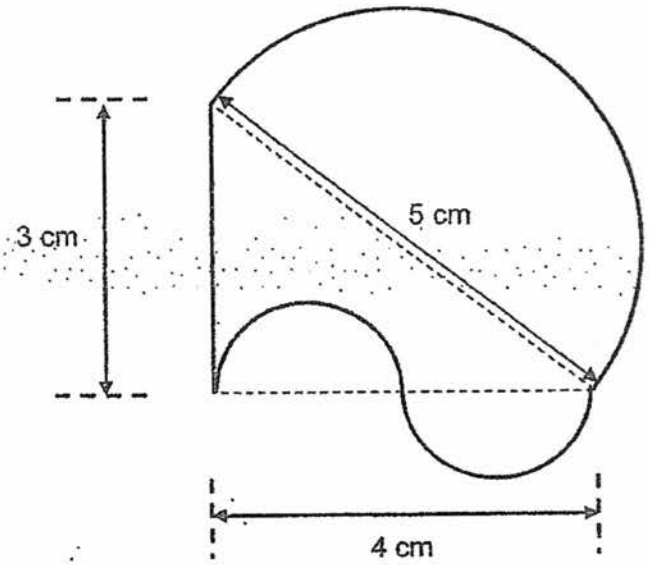
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13. The figure below is formed by 1 large semicircle, 2 small identical semicircles and a straight line. The semicircles are formed along the edges of a right-angled triangle. The dimensions of the triangle are 3 cm, 4 cm and 5 cm.

(a) Find the perimeter of the figure.

(b) Find the area of the figure, correct to 2 decimal places.

(Take $\pi = 3.14$)



Ans : (a) _____ [2]

(b) _____ [3]

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14. Figure A below shows a container of height 40 cm. It is made up of two portions. The top portion is a cuboid which has a square base of 4 cm and a height of 28 cm. The bottom portion is a cuboid with a rectangular base, measuring 25 cm by 8 cm. There are 2.656 litres of water inside the container.

(a) How much more water is needed to fill the container?

(b) The container, containing 2.656 litres of water, is toppled as shown in Figure B. Find the height of the water level in Figure B.

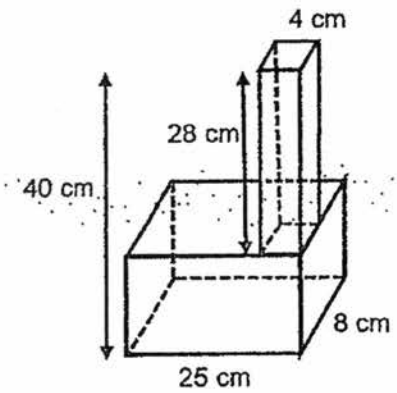


Figure A

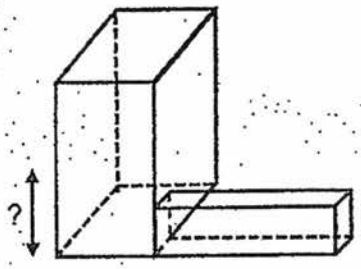


Figure B

Ans : (a) _____ [2]

(b) _____ [2]

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15. Tim and Ravi had $6894. Tim gave 20% of his money to Ravi. Ravi then spent 40% of his money. They had $5518 left in the end. How much money did Ravi have at first?

Ans : _____ [5]

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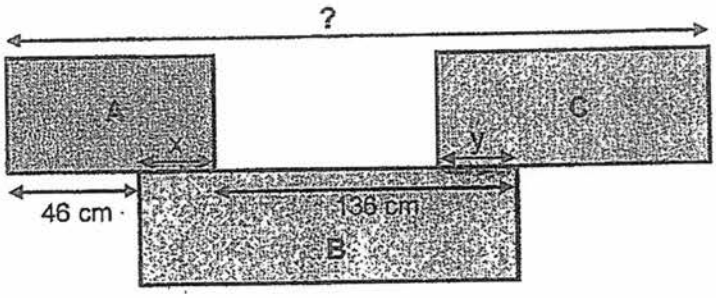
16. Meena bought some pens, pencils, erasers and rulers with $1718.45. The amount of money spent on pens was twice the amount spent on pencils. The amount of money spent on erasers was 3 times the amount spent on rulers. The amount of money spent on pens was $213.20 more than the amount spent on rulers. How much money did Meena spend on rulers and erasers?

Ans : _____ [4]

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17. Sammy drew a figure made up of 3 different rectangles with identical breadth as shown below. The length of rectangle A is $\frac{5}{11}$ the length of rectangle B. The length of rectangle C is $\frac{1}{2}$ of the total length of rectangle A and rectangle B. Length x is equal to length y. Find the length of the figure.



Ans : _____ [4]

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18. A car was travelling from Town A to Town B. At the same time, a van was travelling from Town B towards Town A. After travelling for 120 km, the car went past Gem Market at 08 30. At 10 00, the van passed by the car at the midpoint between Gem Market and Town B. The van reached Gem Market at 12 30. Both the van and the car did not change their speeds for the entire journey. What was the difference between the speed of the car and the van?

Ans : _____.[4]

End of Paper-

Please check your work carefully ☺

Setters : Jacqueline Seto, Lim Li Shan, Seah Nam Sin

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YEAR : 2017
LEVEL : PRIMARY 6
SCHOOL : RAFFLES GIRLS' PRIMARY
SUBJECT : MATHEMATICS
TERM : PRELIMINARY EXAMINATION

Paper 1

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

Q16 798 600 , 796 800 , 789 604 , 789 406

Q17 42

Q18 4.57

Q19 0.0875

Q20 1:35 am

Q21 48 cm^3

Q22 14.5

Q23 12.56 cm^2

Q24 4 : 3

Q25 $13

Q26 $\frac{6}{5}$

Q27 $120

Q28 56 cm

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Q29 590°

Q30 12 days

Paper 2

Q1 No. of boxes at first $\rightarrow \frac{5n}{8}$

No. of boxes left $\rightarrow \frac{5n}{8} - 3$

$\Rightarrow \frac{5n - 24}{8}$

Q2 Total vol. $\rightarrow$ 250 ml + 700 ml

$\Rightarrow$ <u>950 ml</u>

Q3 $\angle BDC = 132° - 90° \rightarrow 42°$

$\angle DBC = (180° - 42°) \div 2 \Rightarrow$ <u>69°</u>

Q4 <u>125 %</u>

Q5 $\angle BAD = \angle BCD \rightarrow 110°$

$\angle BCE = (180° - 88°) \div 2 \rightarrow 46°$

$\angle ECD = 110° - 46° \Rightarrow$ <u>64°</u>

Q6 Total folded in 36 min $= (36 \div 4) + (36 \div 6) + (36 \div 9)$

$= 9 + 6 + 4$

$= 19$

No. of sets of 36 min $= 285 \div 19$

$= 15$

Total mins $= 15 \times 36$

$\Rightarrow$ <u>540 min</u>

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RAFFLES PRELIM

Q7

$1u + 70 - 450 = 5p$

x 12 ↻ $1u - 380 = 5p$

$1u - 121 = 12p$

$12u - 4560 = 60p$ ↺ x 5

$5u - 605 = 60p$

$12u - 4560 = 5u - 605$

$12u - 5u = 4560 - 605$

$7u \rightarrow 3955$

$1u \rightarrow \frac{3955}{7}$

$= 565$

At first $\rightarrow 2u + 70$

$= (2 \times 565) + 70$

$\Rightarrow$ <u>1200 pies</u>

Q8 (a) Total pets $= (1 \times 190) + (2 \times 270) + (3 \times 120) + (40 \times 4)$

$\Rightarrow$ <u>1250 pets</u>

(b) Total families with pets $= 190 + 270 + 120 + 40 \rightarrow 620$

Families with 3 or more $= 120 + 40 \rightarrow 160$

Fractions $\rightarrow \frac{160}{620} \Rightarrow \frac{8}{31}$

Q9 $5u - 129 + 110 = 1u + 129$

$5u - 19 = 1u + 129$

$5u - 1u = 129 + 19$

$4u \rightarrow 148$

$1u \rightarrow \frac{148}{4} = 37$

$(5u) \rightarrow 37 \times 5 = 185$

Ben at first $\rightarrow 185 - 129 \Rightarrow$ <u>56 marbles</u>

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Q10 $\angle BCD = \angle BED = \angle EBF \rightarrow 40°$

$\angle DBE = 180° - (69° + 40°) \rightarrow 71°$

$\angle CBE = 180° - (40° \times 2) \rightarrow 100°$

$\angle CBD = 100° - 71° \rightarrow 29°$

$\angle ABC = 180° - 29° \Rightarrow \underline{151°}$

Q11 Neighbours $\rightarrow \frac{1}{5}$ of total

Remaining $\rightarrow 1 - \frac{1}{5}$

$= \frac{4}{5}$ of total

Son's class party $\rightarrow \frac{1}{3}$ o R

Left $\rightarrow \frac{2}{3}$ of R

$= \frac{2}{3} \times \frac{4}{5}$

$= \frac{8}{15}$ (of total)

At first $\rightarrow \frac{15}{15}$

After baking more $\rightarrow \frac{15}{15} \times 2 = \frac{30}{15}$

$\frac{30}{15} - \frac{8}{15} = \frac{22}{15}$

$\frac{22}{15} \rightarrow 594$

$\frac{1}{5} = \frac{3}{15}$

$\frac{3}{15} \rightarrow \frac{594}{22} \times 3 \Rightarrow \underline{81 \text{ cookies}}$

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RAFFLES PRELIM

Q12 (a)

	A	:	C
	3	:	2
x 9			
	27	:	18

Total (u) $\rightarrow 27u + 18u = 45u$

% Girls $\rightarrow \frac{8}{45} \times 100\% \Rightarrow 17\frac{7}{9}\%$

(b) (u) $ collected from A $\rightarrow 27u \times 10 = 270u$
(u) $ collected from G $\rightarrow 8u \times 6 = 48u$
(u) $ collected from B $\rightarrow 10u \times 6 = 60u$
Total $\rightarrow 270u + 48u + 60u = 378u$
$378u \rightarrow 21168$

$1u \rightarrow \frac{21168}{378} = 56$

B (10u) $\rightarrow 56 \times 10 \Rightarrow$ <u>560 boys</u>

Q13 (a) Diameter of small semi $\rightarrow 2$

Perimeter of 2 small semi $\rightarrow \pi \times d$
$= 3.14 \times 2$
$= 6.28$

Perimeter of 1 big semi $\rightarrow \pi \times d \times \frac{1}{2}$

$= 3.14 \times 5 \times \frac{1}{2}$

$= 7.85$

Perimeter of figure $\rightarrow 7.85 + 6.28 + 3$
$\Rightarrow$ <u>17.13 cm</u>

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(b) $\triangle \rightarrow \frac{1}{2} \times 3 \times 4 = 6$

$5 \div 2 = 2.5$

Semi $\rightarrow \pi \times r \times r \times \frac{1}{2}$

$= 3.14 \times 2.5 \times 2.5 \times \frac{1}{2} = 9.8125$

≈ 9.81

Total area $\rightarrow 6 + 9.81 \Rightarrow \underline{15.81 \text{ cm}^2}$

Q14 (a)

Height of bottom cuboid	$\rightarrow 40 - 28 = 12$
Water in bottom cuboid	$\rightarrow 12 \times 25 \times 8 = 2400 \text{ cm}^3$
Capacity of top	$\rightarrow 28 \times 4 \times 4 = 448 \text{ cm}^3$
Total capacity	$\rightarrow 2400 + 448 = 2848 \text{ cm}^3$

$2.656 \ell = 2656 \text{ m}\ell$

Water to be filled $\rightarrow 2848 - 2656 \Rightarrow \underline{192 \text{ cm}^3}$

(b) $2656 - 448 = 2208$ (in bottom cuboid)

Base of bottom $\rightarrow 8 \times 12 = 96$

$2208 \div 96 \Rightarrow \underline{23 \text{ cm}}$

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RAFFLES PRELIM

Q15 T at first → 100u
R at first → 100p
100u + 100p → 6894
T gave → 20u
T left → 80u
R now → 100p + 20u
R spent → 40p + 8u
R left → 60p + 12u

80u + 60p + 12u = 5518
92u + 60p = 5518

x 5

100u + 100p = 6894
460u + 300p = 27590

x 3

300u + 300p = 20682
160u → 6908

$$100u \rightarrow \frac{6908}{160} \times 100$$

$$= 4317.50$$

R at first (100p) → 6894 – 4317.50 ⇒ $2576.50

Q16 R → 2u
E → 6u
Pen → 2u + 213.20
Pencil → 1u + 106.60
2u + 6u + 2u + 213.20 + 1u + 106.60 = 1718.45
11u + 319.80 = 1718.45
11u → 1398.65
1u → 127.15
2u + 6u = 8u
8u → 127.15 x 8 ⇒ $1017.20

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Q17 $11u - 5u = 6u$

$6u \rightarrow 136 - 46 = 90$

$1u \rightarrow \frac{90}{6} = 15$

Overlapped $\rightarrow (15 \times 5) - 46 = 29$

A B C $\rightarrow 24 \times 15 = 360$

Length $\rightarrow 360 - 29 - 29 \Rightarrow$ <u>302 cm</u>

Q18

	<u>Car</u>	:	<u>Van</u>
Time	3	:	5
Speed	5	:	3
Distance	5	:	3

2u of distances $\rightarrow$ 120 km

$3u \rightarrow \frac{120}{2} \times 3 = 180$

Van speed $\rightarrow 180 \div 2\frac{1}{2} = 72$ km/h

Difference $\rightarrow (72 \div 3) \times 2 \Rightarrow$ <u>48 km/h</u>

End

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