Math Teacher:

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

Name: _____ ( )

Form Class: P6 _____

Date: 31 July 2012 **Duration: 50 min**

Your Score (Out of 100 marks)			
Your Score (Out of 40 marks)			
		Banded Math Class	**Level**
PAPER 1 (40%)	**Highest Score**		
	Average Score		
TOTAL (100%)	**Highest**		
	Average Score		
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.

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. No calculators may be used for this paper.

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1. In the numeral 5 769 284, the digit 7 is in the _____ place.

   (1) hundreds

   (2) ten thousands

   (3) hundred thousands

   (4) millions

2. A number when rounded off to the nearest ten thousand is 780 000. What is the number?

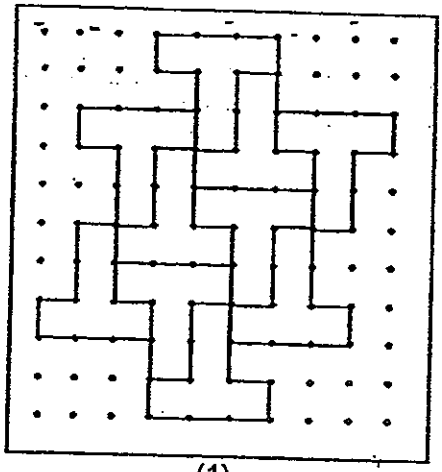
   (1) 774 500

   (2) 774 999

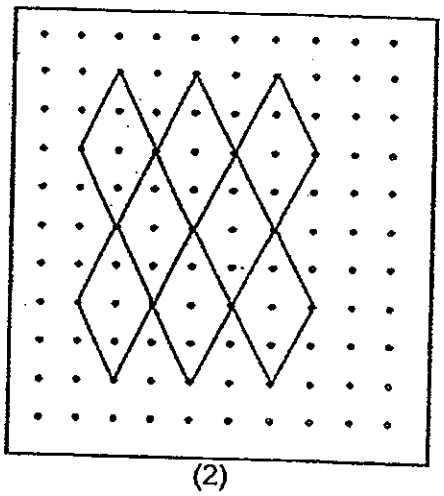
   (3) 784 855

   (4) 785 000

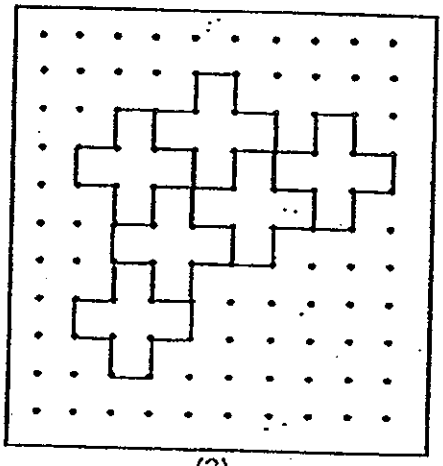
3. Which one of the following is **NOT** a tessellation?



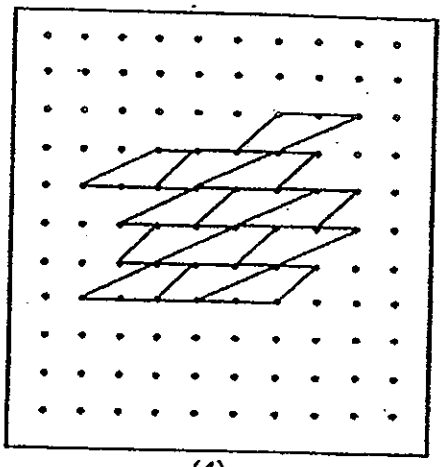
(1)



(2)



(3)



(4)

4. A concert started at 8.30 p.m. and ended at 11.10 p.m.
How long was the concert in hours and minutes?

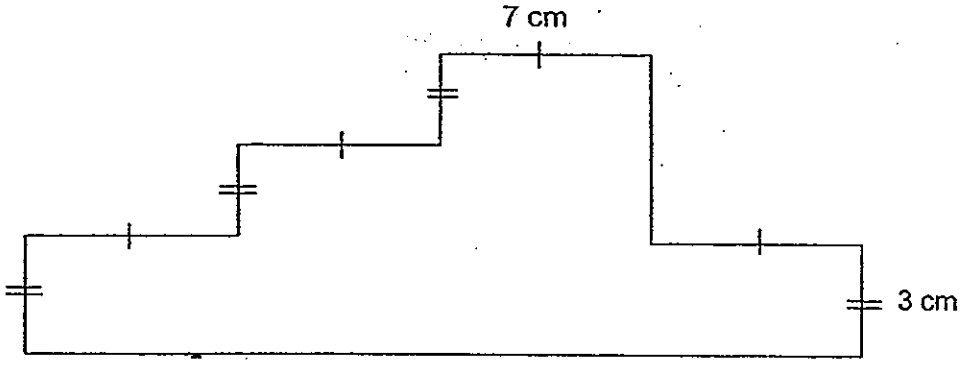
(1) 2 h 20 min

(2) 2 h 40 min

(3) 3 h 20 min

(4) 3 h 40 min

5. Find the perimeter of the figure below.



(1) 40 cm

(2) 57 cm

(3) 67 cm

(4) 74 cm

6. $1\frac{1}{3}$ of A is $\frac{1}{2}$ of B.
Express A as a fraction of B.

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

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

(3) $\frac{2}{3}$

(4) $\frac{3}{4}$

7. Find the missing value in the box below.

$3 \times 1.05 =$ [?] tenths

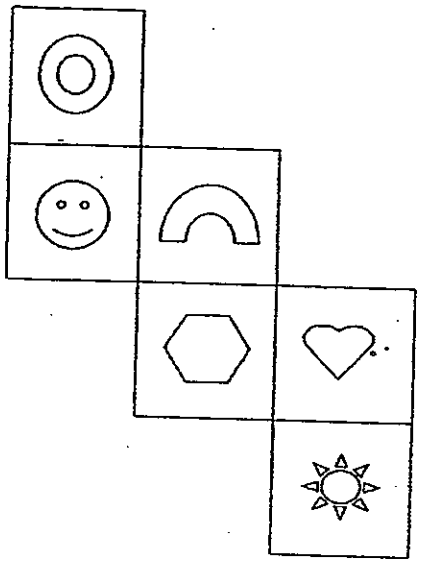
(1) 0.315

(2) 3.15

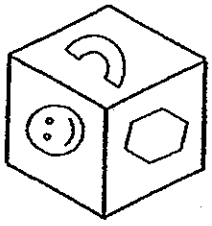
(3) 31.5

(4) 315

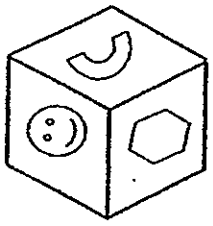
8. The figure below shows the net of a cube.



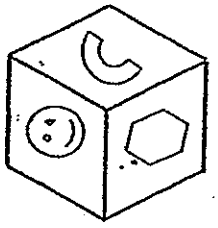
Which of the following shows the correct orientation?



(1)



(2)



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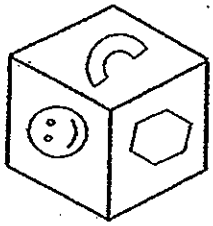


(4)

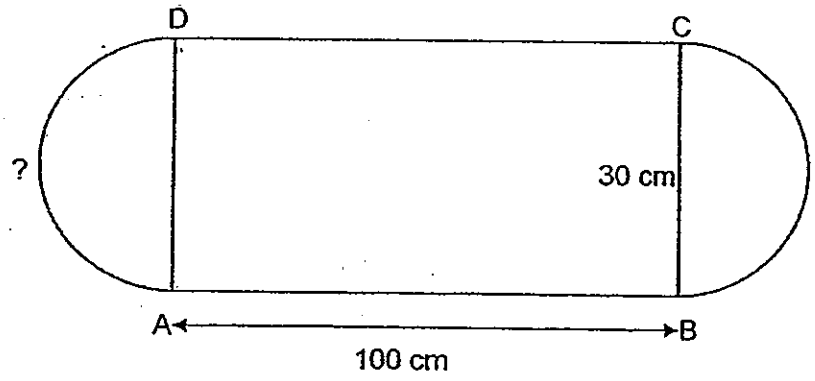
9. The table shows the hourly rate earned by a part-timer in a fast-food restaurant.

Day	Hourly rate
Weekday (Monday to Friday)	\$6
Weekend (Saturday and Sunday)	\$8

Janet works in the restaurant 8 hours daily on weekdays and 5 hours on Saturday. How much will she be able to earn in that week?

(1) \$ 360
(2) \$ 320
(3) \$ 288
(4) \$ 280

10. The figure below is made up of a rectangle and 2 identical semicircles. AB = 100 cm, BC = 30 cm and the perimeter of the figure is 420 cm. Find the length of the curved line AD. (Take $\pi = \frac{22}{7}$)



(1) 80 cm
(2) 95 cm
(3) 110 cm
(4) 220 cm

11. Sally's monthly salary is $3 000. She gives 30% of her salary to her parents, spends 60% of the remainder and saves the rest. How much money will she save?

(1) $210
(2) $840
(3) $1260
(4) $1800

12. The table below shows the scores of 140 pupils who took part in a Mathematics competition.

Score	0 -15	16 -20	21-25	26-30	31-35	36-40	41-45	46-50
No. of pupils	20	43	30	26	6	8	5	2

Prizes were awarded to the top 15% of the pupils with the highest scores. What was the minimum score a pupil needed to achieve to be awarded a prize?

(1) 30
(2) 31
(3) 35
(4) 36

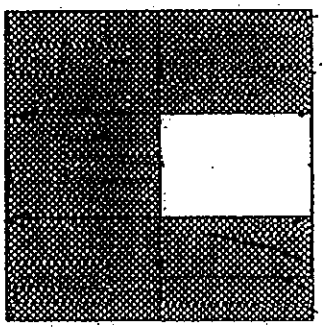
13. Katherine and Jenny both jogged along the same route at the park. Katherine jogged at an average speed of 12 km/h while Jenny was 4 km/h slower than Katherine. If the route was 10 km long, how much longer would Jenny take to finish than Katherine?

(1) 25 min
(2) 37.5 min
(3) 50 min
(4) 75 min

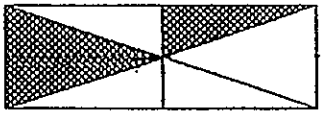
14. Square A and Rectangle B are partially shaded as shown below.

The area of the Rectangle B is $\frac{1}{3}$ the area of the Square A.

What fraction of the total area of Square A and Rectangle B is shaded?



Square A



Rectangle B

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

(2) $\frac{13}{20}$

(3) $\frac{9}{13}$

(4) $\frac{23}{32}$

15. A fitness club has a membership of 96 people. The number of female to male members was 5 : 3. When 54 new members joined the fitness club, the ratio of female to male members became 3 : 2.

How many of the new members were males?

(1) 18

(2) 24

(3) 27

(4) 30

SECTION B (20 marks)

Questions 16 to 25 carry 1 mark each. Questions 26 to 30 carry 2 marks 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.

16. Arrange the numbers in ascending order.

282 450 , 275 930 , 290 523 , 275 399

Ans: _____ , _____ , _____ , _____

17. Arrange the fractions below in descending order.

$\frac{4}{5}, \frac{3}{4}, \frac{9}{10}, \frac{7}{8}$

Ans: _____, _____, _____, _____

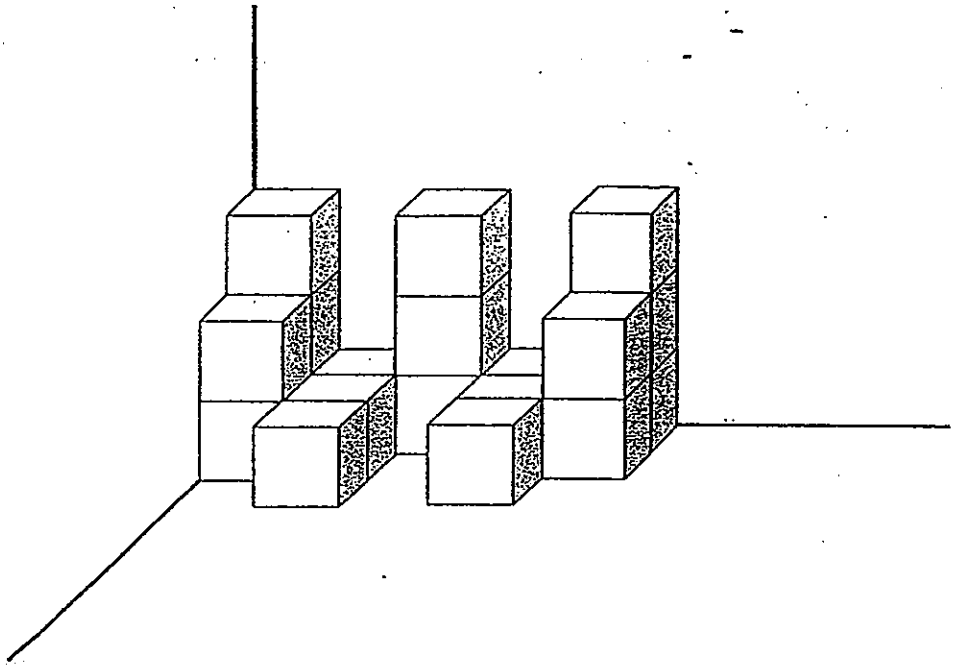
18. Fill in the missing number in the box.

$0.15 \times 18 = 0.45 \times$ ☐

19. Express $\frac{2}{7}$ of 4.9*l* in millilitres.

Ans: _____ m*l*

20. The figure below is made up of 2-cm cubes.
Find the volume of the figure.



Ans: _____ cm^3

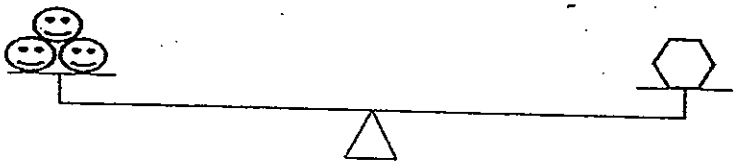
21. Find the value of $\frac{1}{4} - \frac{1}{5}$. Express the answer in decimal.

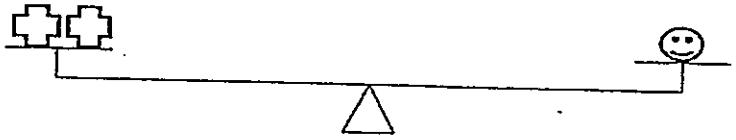
Ans: _____

22. Sam had $150 and he used $60 to buy a pair of pants. What percentage of his money had he left?

Ans: _____ %

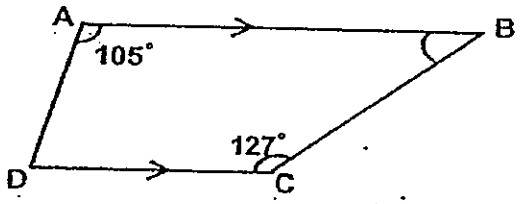
23. Study the two scales below.
Given that the mass of  is 6 kg, find the mass of 





Ans: _____ kg

24. The figure below shows a trapezium ABCD.
Given that AB // DC, ∠BAD = 105° and ∠BCD = 127°, find ∠ABC.



Ans: _____ °

25. The difference in mass between two boys is 8 kg. If their total mass is 58 kg, what is the ratio of the mass of the lighter boy to the mass of the heavier boy?

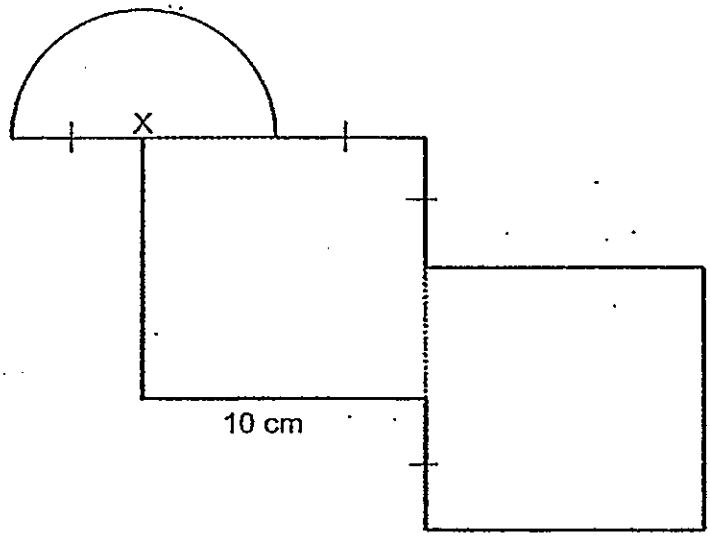
Ans: _____

26. A container can hold either 140 cuboids or 350 cubes.
If there are already 200 cubes in the container, how many cuboids can be put into the container?

Ans: _____

27. The figure below is made up of a semicircle and 2 identical squares. X is the centre of the semicircle.

Find the perimeter of the figure. (Take $\pi = 3.14$)

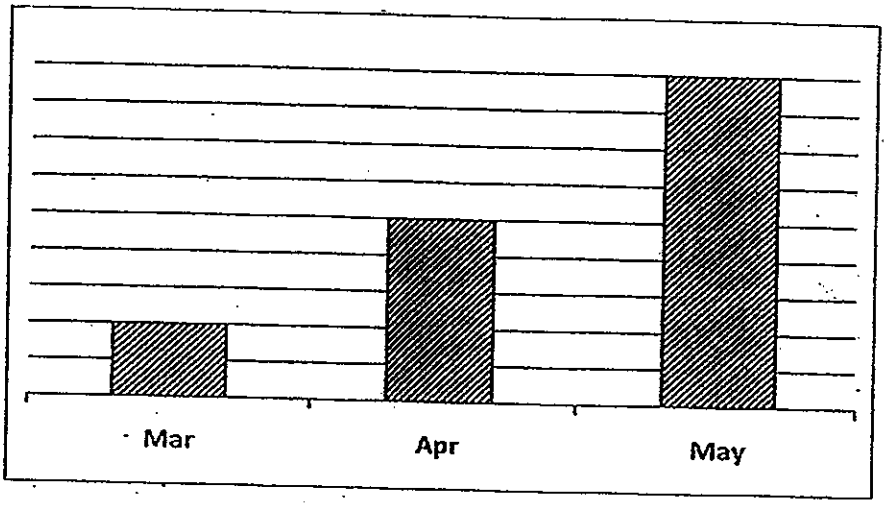


Ans: _____ cm

28. Find the value of $2a + \frac{1}{2a}$ when $a = \frac{1}{2}$.

Ans: _____

29. The bar chart shows the number of toys sold by Mr Tan for each month over a 3-month period. A part of the bar chart was torn. The difference in the number of toys sold in March and May was 56. How many toys were sold in April?



Ans: _____

30. Lionel would take 8 days to build a wall. For the same wall, Nick would take 6 days. How many days would be needed to build the same wall if both of them worked together?

Ans: _____

-End of Paper-

Please check your work carefully ☺

Setters: Desmond Lee, Ee Bee Yian, Phan Wai Mun & Wai Sook Har

Math Teacher:

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

Name: _____ ( )

Form class: P6 _____

Date: 31 July 2012 **Duration: 1 h 40 min**

Your Score (Out of 60 marks)		
	Banded Math Class	**Level**
Highest Score		
Average Score		

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. The use of calculator is allowed for this paper.

Questions 1 to 5 carry 2 marks each.
Show your working clearly in the space provided for each question and write your answer in the spaces provided. All diagrams are not drawn to scale.
Marks will be awarded for relevant working. The number of marks available is shown in brackets [ ] at the end of each question or part-question.

---

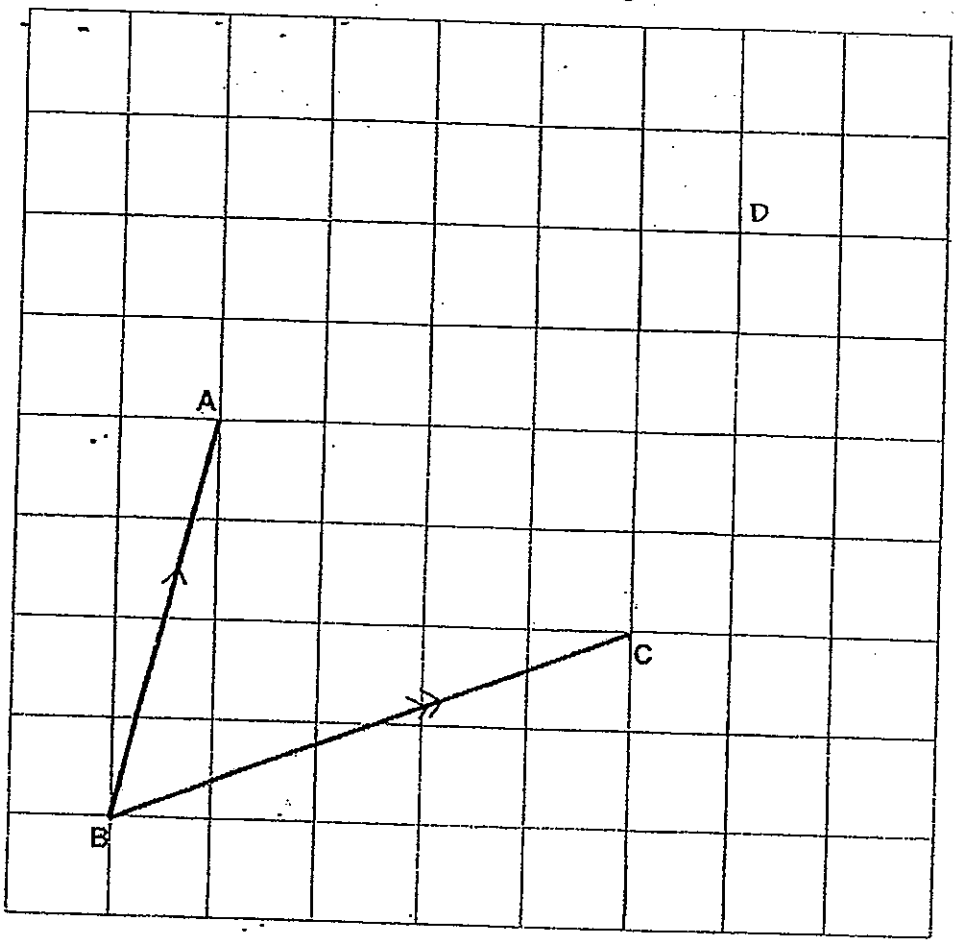
1. $a = 20 + 4c$ and $b = 21 \times c$. Find $a + b$.

Ans: _____

2. Jennifer bought a dress during the Great Singapore Sale. The price of the dress after a 30% discount was $101.50. What was the discount?

Ans: $ _____

3. In the grid below, draw and label the parallelogram ABCD.



4. There are some apples and oranges in a basket.

If 3 apples are removed, there will be $\frac{1}{4}$ as many apples as oranges.

If 3 oranges are removed, there will be equal number of apples and oranges.
How many fruits are there altogether?

Ans: _____

5. Find the value of the missing number in the box.

$$96 - 6 \times \boxed{?} + (101 - 86) = 51$$

Ans: _____

For questions 6 to 18, show your working clearly in the space provided for each question and write your answers with the correct units in the spaces provided.

The number of marks available is shown in brackets [ ] at the end of each question or part-question.

6. Mr Soh, a wholesaler, has enough money to buy 7 handbags and 5 watches. With the same amount of money, he can buy 3 handbags and 11 watches. Given that the price of each handbag is $285, how much money does he have?

Ans : _____ [3]

7. Jeya spent 5 min less than q hours to answer 100 questions in a quiz.

(a) Express the average duration, in minutes, which Jeya spent to answer each question. Give your answer in terms of q.

(b) Find the average duration, in minutes, which Jeya spent to answer each question when $q = 3$.

Give your answer as a fraction in the simplest form.

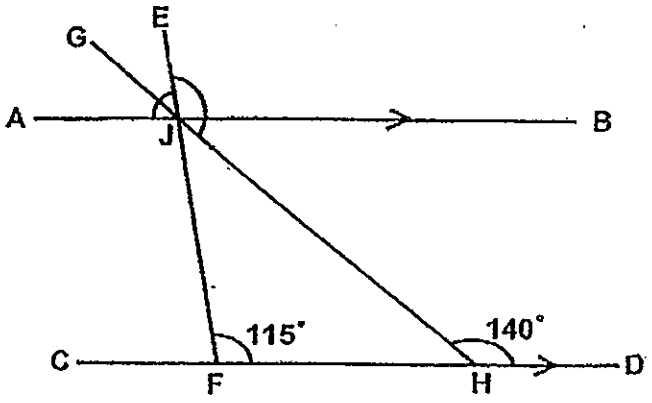
Ans: (a) _____ [2]

(b) _____ [1]

8. In the figure, AB // CD, $\angle EFH = 115^\circ$ and $\angle GHD = 140^\circ$. AB, CD, EF and GH are all straight lines. Find

(a) $\angle AJE$ and

(b) $\angle EJH$.



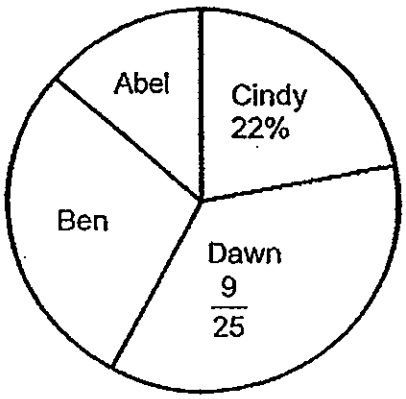
Ans: (a) _____ [1]

(b) _____ [2]

9. Beatrice has some twenty-cent and fifty-cent coins.
$\frac{2}{3}$ of the total value of the twenty-cent coins is the same as $\frac{1}{2}$ of the total value of the fifty-cent coins.
If Beatrice spends 4 fifty-cent coins, the value of the twenty-cent coins and the value of the remaining fifty-cent coins will be the same.
How many twenty-cent coins does Beatrice have?

Ans: _____ [3]

10. The pie chart shows the stamp collection of four children, Abel, Ben, Cindy and Dawn.



(a) Given that Dawn had 180 stamps and the ratio of the number of stamps Ben had to the number of stamps Abel had was 2 : 1, find the number of stamps Ben had.

(b) Express the number of stamps Abel had as a fraction of the total number of stamps.

Ans: (a) _____ [2]

(b) _____ [1]

11. Mrs Lee would like to purchase some pens which cost $2.50 each. For every 3 pens purchased, the 4th pen can be purchased at 40% discount. If Mrs Lee has $80, what is the maximum number of pens that she can buy?

Ans: _____ [4]

12. There are 90 more boys than girls in a school.

The ratio of the number of girls who can swim to the number of girls who cannot swim is 31 : 49.

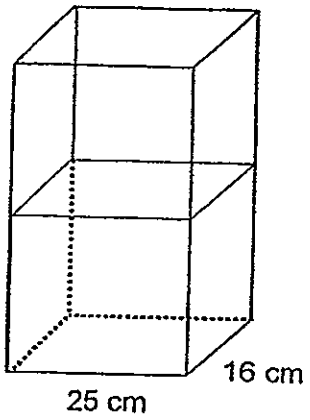
The number of boys who can swim is 120 less than the number of boys who cannot swim.

If there are 1690 pupils in the school, how many pupils cannot swim?

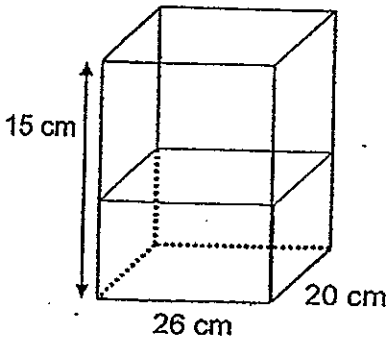
Ans: _____ [5]

13. Tanks A and B contained equal amount of water at first. When 1500 cm^3 of water was poured from Tank A into B, Tank B became $\frac{2}{3}$ full.

(a) What was the volume of water in Tank B at first?
(b) What was the height of water left in Tank A?



Tank A



Tank B

Ans: (a) _____ [2]

(b) _____ [2]

14. Log A and Log B are of different lengths.

A carpenter wants to saw them into equal number of shorter pieces.

The length of each piece from Log A need not be the same as that of each piece from Log B.

If he saws Log A into 1.2m–pieces and Log B into 0.9m–pieces, he has no leftover from Log A but there will be 0.6 m of Log B left.

If he saws Log A into 1.6–m pieces and Log B into 1.25m–pieces, he will also have no leftover from Log A but there will be 0.3 m of Log B left.

Find the length of Log A.

Ans: _____ [4]

15. A motorist who left Town A for Town B covered $\frac{2}{7}$ of his journey when he passed a motorcyclist who was travelling at an average speed of 48 km/h. 25 minutes later, the motorist reached Town B. The motorcyclist was still 20 km away from Town B. If both the motorist and motorcyclist started their journey from Town A, how long did the motorcyclist take to travel from Town A to Town B?

Ans: _____ [4]

16. A train was travelling from Town A to Town D, stopping at Town B and Town C along the journey.

At Town B, $\frac{3}{7}$ of the number of passengers alighted. The new passengers who boarded the train was $\frac{1}{2}$ of those who alighted. The train proceeded to Town C.

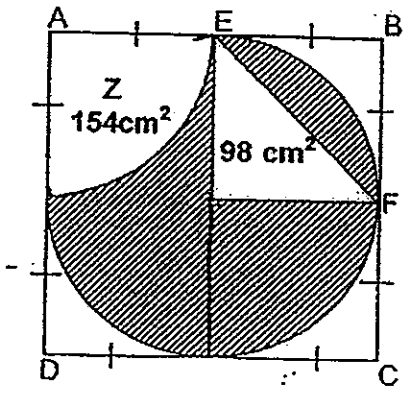
At Town C, $\frac{1}{2}$ of the number of passengers alighted, but no passengers boarded the train. The number of passengers in the train was 408 fewer than the number of passengers in the train before it left Town A.

All passengers alighted at Town D.

How many passengers alighted at Town D?

Ans: _____ [4]

17. In the figure below, ABCD is a square. O is the centre of the circle. The area of triangle EOF is 98 cm^2 and the area of quadrant Z is 154cm^2. Find the area of the shaded region. (Take $\pi = \frac{22}{7}$)



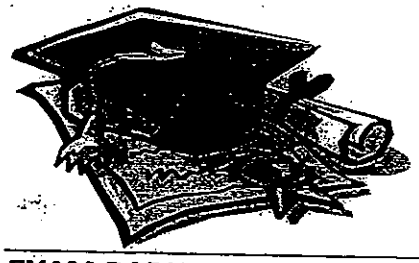
Ans: _____ [5]

18. There were 1600 pupils in a primary school. When the number of boys increased by 76 and the number of girls decreased by 4%, the total enrolment in the school increased by 3%. How many boys were there in the school at first?

Ans: _____ [5]

-End of Paper-

Please check your work carefully ☺



ANSWER SHEET

EXAM PAPER 2012

SCHOOL : RAFFLES GIRLS'
SUBJECT : PRIMARY 6 MATHEMATICS

TERM : SA2

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

16)275399, 275930, 282450, 290523

17)9/10, 7/8, 4/5, ¾

18)0.15 x 18 = 2.7
2.7 ÷ 0.45 = 6

19)4.9 ÷ 7 = 0.7
0.7 x 2 = 1.4
1.4L = 1400ml

20)2 x 2 x 2 = 8
19 x 8 = 152cm3

21)¼ - 1/5 = 5/20 – 4/20 = 1/20
100 ÷ 20 = 5
1/20 = 0.05

22)150 – 60 = 90
90/150 x 100% = 60%

23)6 x 2 = 12
12 x 3 = 36kg

24) ∠ABC→180° − 127° = 53°

25)58 − 8 = 50
50 ÷ 2 = 25 (L)
25 + 8 = 33 (H)
25:33

26)350 − 200 = 150
140 cuboids→350 cubes
0.4cuboids→1 cube
60 cuboids→150 cubes

27)10 ÷ 2 = 5
(3.14 x 2 x 5) ÷ 2 = 15.7
15.7 + 5+10+10+5+10+10+10+5+5 = 85.7cm

28)2 x ½ =1
1 + 1/1 = 2

29)56 ÷ 7 = 8
8 x 5 = 40 toys

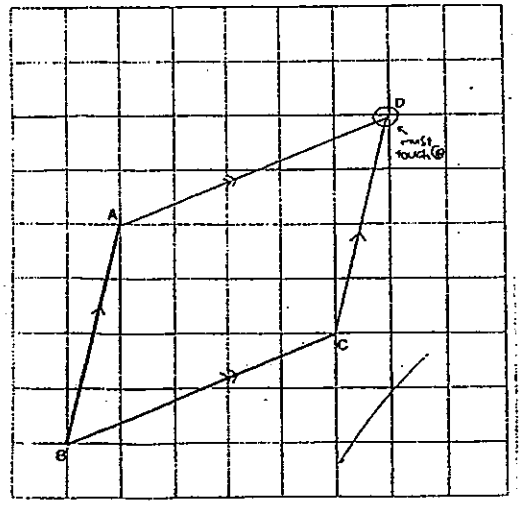
30)1 day→1/8 (L)
1 day→1/6 (N)
1/8 + 1/6 = 3/24 + 4/24 = 7/24
24 ÷ 7 = $3_{3/7}$

Paper 2

1)(20 + 4c)+21c
= 20+25c

2)101.50 ÷ 70 = 1.45
1.45 x 30 = $43.5

3)



4)1:4→u
1:1→p

1u + 3→1p
4u − 3→1p
4 − 1 = 3
3 = 3 = 6
6÷3 = 2 (1u)
2 x 5 = 10
10 + 3 = 13 fruits

5)101 − 85 = 15
51 − 15 = 36
96 − 36 = 60
60÷6 = 10

6)11 − 5 = 6
7 − 3 = 4
$285 x 4 = $1140
$1140÷6 = $190
$190 x 11 = $2090
$2090 + ($285x3) = $2945

7)q x 60 = 60q (min)
60 x 3 = 180
180 − 5 = 175
175÷100 = 1.75
1.75min = 1¾min
a)(60q − 5/100)min
b)1¾min

8)∠AJE→180° − 115° = 65° (a)
∠JHF→180° − 140° = 40°
∠FJH→180° − 40° − 115° = 25°
∠EJH→180° − 25° = 155° (b)

9) ½ = 2/4

4 − 3 = 1
50c x 4 = $2 (spent)
$2→1u
$2 x 3 = $6 (20c)
$2 x 4 = $8 (50c)
$6÷$0.20 = 30 coins

10) 9/25 = 18/50
a)180÷18 = 10 (1u)
1 – 18/50 – 11/50 = 21/50
21÷3 = 7
7 x 2 = 14 (B)
10 x 14 = 140 stamps
b)7 x 1 = 7
10 x 7 = 70 (A)
10 x 50 = 500
70/500 = 7/50

11)2.50 x 3 = 7.50
2.50 x 3/5 = 1.50
7.50 + 1.50 = 9 (1set) (4 pens) ($)
80÷9 = 8 r 8
$8 are left
$8 - $7.50 = $0.50
8 x 4 = 32
32 + 3 = 35 pens

12)1690 – 90 = 1600
1600÷2 = 800 (1u) (G)
800 +90 = 890 (B)
800÷(31+49) = 10
890 – 120 = 770
770÷2 = 385 (B can swim)
385 + 120 = 505 (cannot swim) (B)
505 + (10x49) = 995 pupils

13)a)(15 x 26 x 20) x 2/3 = 5200 (B aft)
5200 – 1500 = 3700cm3
b)3700 – 1500 = 2200 (aft A)
25 x 16 = 400
2200÷400 = 5.5cm

14)1.2 x 8 = 9.6
1.6 x 6 = 9.6 (A)
Check
0.9 x 8 = 7.2
7.2 + 0.6 = 7.8 (B)
1.25 x 6 = 7.5
7.5 + 0.3 = 7.8 (B)
Ans: 9.6m

15)20÷48 = 5/12
5/12h = 25 min
25 + 25 = 50
50 min = 5/6h
48 x 5/6 = 40
40÷5 = 8
8 x 7 = 56
56÷48 = $1_{1/6}$h

16)3/7 x ½ = 3/14 (new at B to C)
1 – 3/7 = 4/7 (stay in B)
4/7 + 3/24 = 11/14
11/14÷2 = 11/28
28 – 11 = 17
408÷17 = 24 (1/28)
24 x 11 = 264 passengers

17)(22/7x ? x ?) ÷4 = 154
154 x 4 = 616
616÷22/7 = 196
$\sqrt{196}$ = 14 (r)
14 x 14 = 196
196 – 154 = 42
154 – 42 = 112
22/7 x 14 x 14 = 616
616 – 112 – 98 = 406cm_2

18)1600÷100 = 16
16 x 103 = 1648 (aft)
1600 + 76 = 1676
1676 – 1648 = 28
28÷4 = 7 (G) (1u)
7 x 100 = 700
1600 – 700 = 900boys