



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

Name: _____

Form Class: P6 _____

Date: 20 August 2013

Duration: 50 min

Your Score (Out of 100 marks)	
Paper 1 (Out of 40 marks)	
Paper 2 (Out of 60 marks)	
Overall (Out of 100 marks)	

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.

1. In the numeral 342 057, the value of digit 4 is _____.

- (1) 40
- (2) 400
- (3) 4000
- (4) 40 000

2. $\frac{24}{27} = \frac{32}{\boxed{?}}$

What is the missing number in the box?

- (1) 35
- (2) 36
- (3) 48
- (4) 72

3. $315.09 = 3 \text{ hundreds} + 1 \text{ ten} + 4 \text{ ones} + \boxed{?} \text{ hundredths}$

What is the missing number in the box?

- (1) 1.09
- (2) 9
- (3) 10.9
- (4) 109

4. Express 10.01 litres in millilitres.

(1) 1001 ml

(2) 10 001 ml

(3) 10 010 ml

(4) 10 100 ml

5. A rectangle has an area of 24 cm^2 . Its length is 6 cm. Calculate its perimeter.

(1) 24 cm

(2) 20 cm

(3) 10 cm

(4) 4 cm

6. A number when rounded off to the nearest thousand is 800 000. What is the number?

(1) 799 499

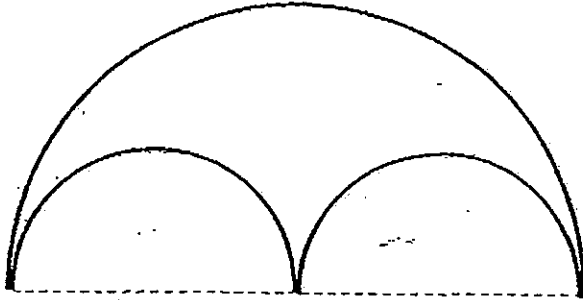
(2) 799 999

(3) 800 999

(4) 804 999

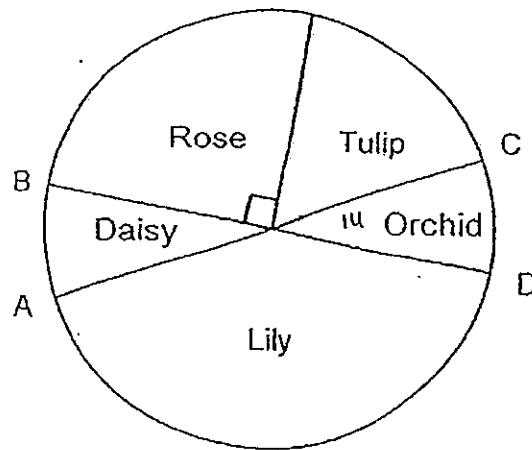
7. A flask was completely filled with water. After pouring out 120 ml of water from the flask, it was still $\frac{5}{8}$ filled with water. What was the capacity of the flask?
- (1) 192 ml
 - (2) 200 ml
 - (3) 320 ml
 - (4) 360 ml
8. Find the value of $\frac{1}{9} - \frac{1}{900}$
- (1) 0.001
 - (2) 0.090
 - (3) 0.101
 - (4) 0.110
9. Kenny and his friends went for a movie which lasted 115 minutes. The movie ended at 8.40 p.m.. What time did the movie start?
- (1) 6.45 p.m.
 - (2) 7.25 p.m.
 - (3) 9.55 p.m.
 - (4) 10.35 p.m.

10. The figure below is made up of a big semicircle and two identical small semicircles. What is the perimeter of the figure if the radius of the big semicircle is 14 cm? (Take $\pi = \frac{22}{7}$)



- (1) 88 cm
(2) 22 cm
(3) 72 cm
(4) 44 cm
11. Benny and Tammy shared the cost of a gift. Benny and Tammy used up 60% and 20% of their savings respectively. After buying the gift, they each had \$24 left. How much was the gift?
- (1) \$36
(2) \$42
(3) \$90
(4) \$112

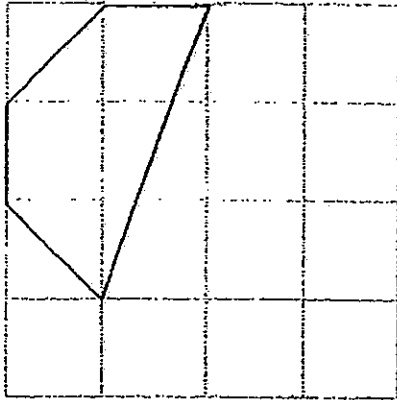
12. The pie chart below shows the favourite flower of a group of girls. AC and BD are straight lines. The number of girls who chose tulip is twice that of the girls who chose daisy. Given that the total number of girls who chose daisy and orchid is 42, what is the number of girls who had chosen lily?



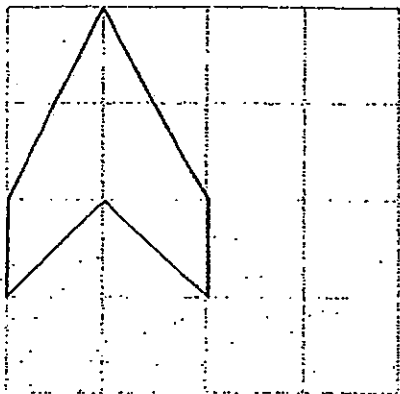
- (1) 63
 (2) 70
 (3) 105
 (4) 150
13. James saved \$30 of his allowance and spent the rest. If he increased his savings by 40%, his spending would decrease by 20%. How much was his allowance?
- (1) \$48
 (2) \$78
 (3) \$90
 (4) \$106

14. Which one of the shapes below cannot be tessellated?

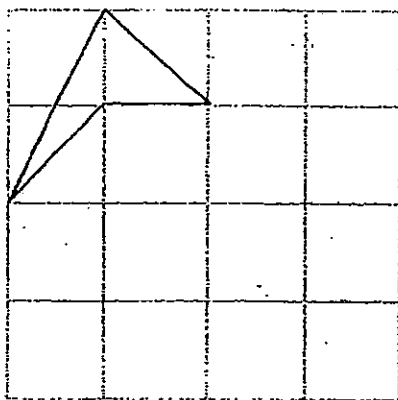
(1)



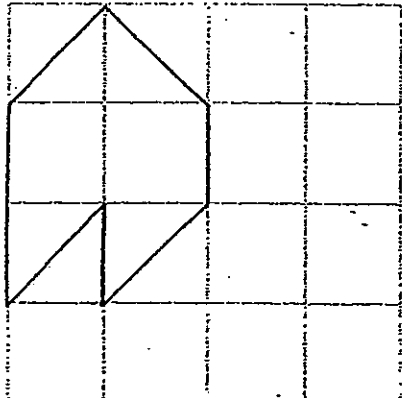
(2)



(3)



(4)



15. A bus has a capacity for 36 adults or 54 students.
After 3 teachers and 39 Primary Six students have boarded the bus, what is the maximum number of students that can still board the bus?

- (1) 7
- (2) 10
- (3) 11
- (4) 15

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. What is the largest 2-digit number that is a multiple of 4?

Ans: _____

17. What is the missing number in the box?

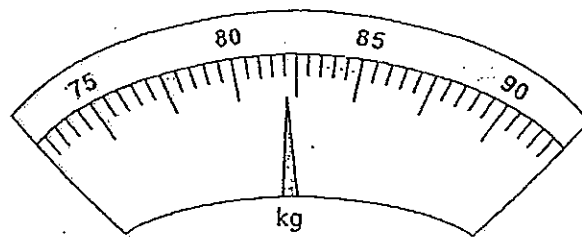
$$\frac{5}{9} \div 3 = 5 \times \boxed{?}$$

Ans: _____

18. Express $7\frac{2}{7}$ as a decimal correct to 1 decimal place.

Ans: _____

19. What is the reading indicated on the weighing scale below?



Ans: _____ kg

20. The total surface area of a cube is 96 cm^2 . Find the volume of the cube.

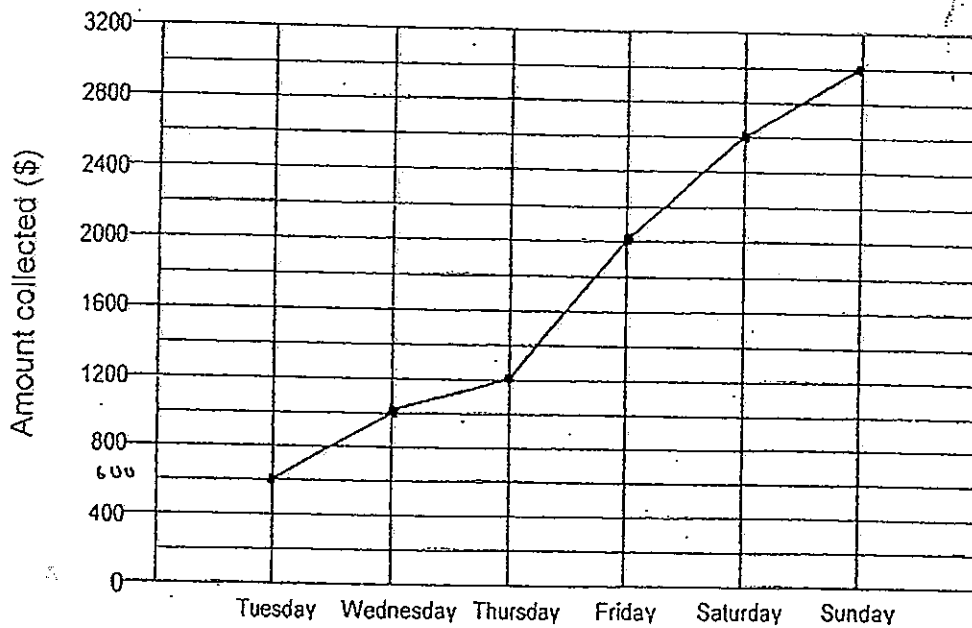
$$4 \times 4 \times 4 = 64$$

Ans: _____ cm^3

21. Express \$2.40 as a percentage of 60¢.

Ans: _____ %

22. The line graph below shows the amount of money collected during a donation drive from Tuesday to Sunday.

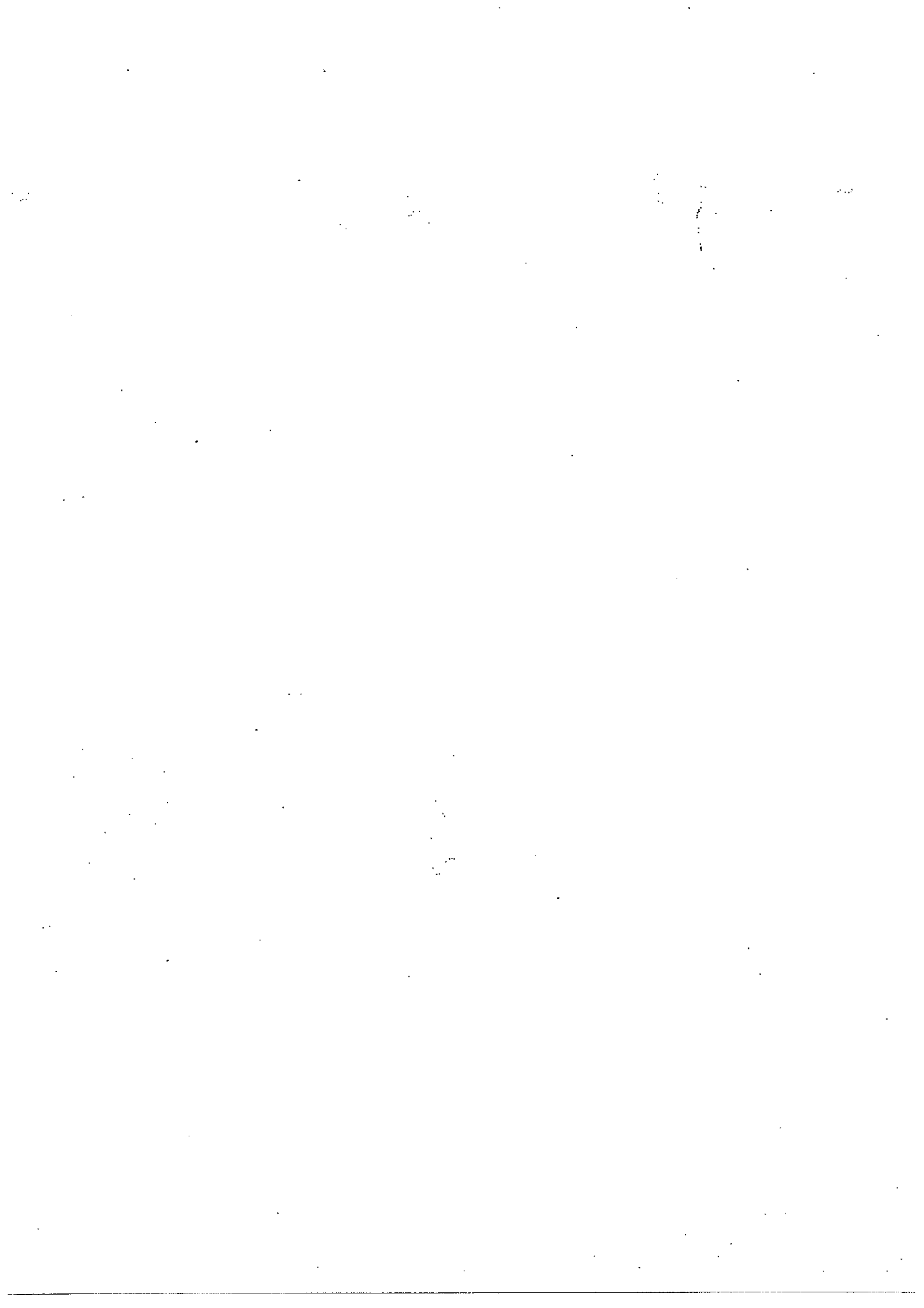


Express the amount of money collected on Tuesday as a fraction of the amount of money collected on Saturday. Give your answer in its simplest form.

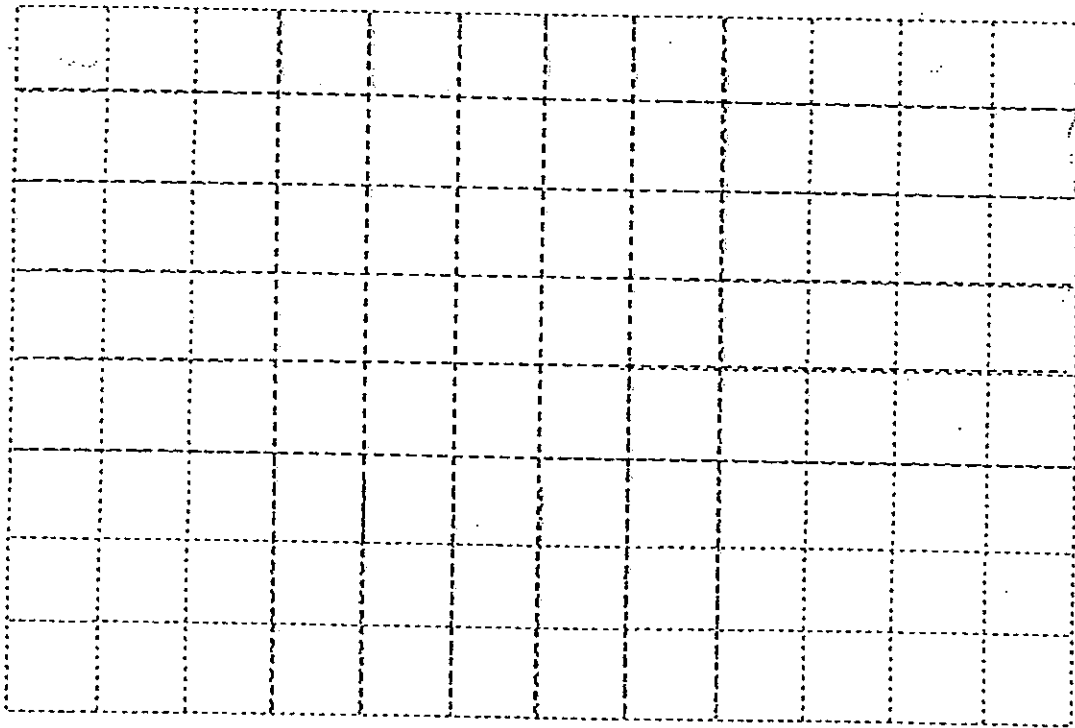
Ans: _____

23. Round off 1.949 to 1 decimal place.

Ans: _____



24. Complete the net of a cuboid below.



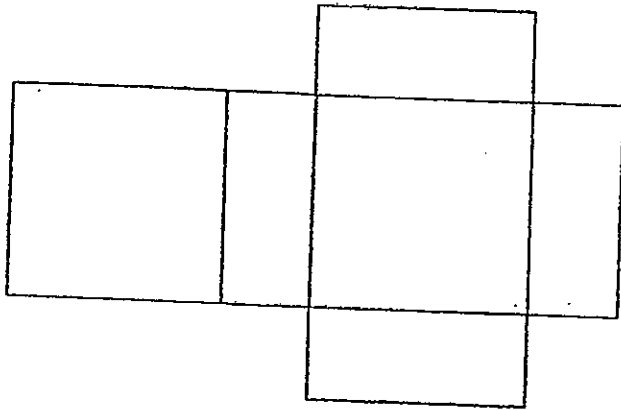
25. In a class, $\frac{1}{3}$ of the pupils are girls. $\frac{1}{2}$ of the girls wear spectacles. What is the ratio of the number of girls who wear spectacles to the number of pupils in the class?

Ans: _____

26. The mass of a container which is $\frac{1}{3}$ filled with flour is 690g. When the container is $\frac{2}{3}$ filled with flour, its mass increases to 1050g. Find the mass of the container.

Ans: _____ g

27. The net of a cuboid is made up of 2 squares and 4 rectangles as shown below. The area each square is 100 cm^2 . Given that the total surface area of the net is 280 cm^2 what is the volume of the cuboid?

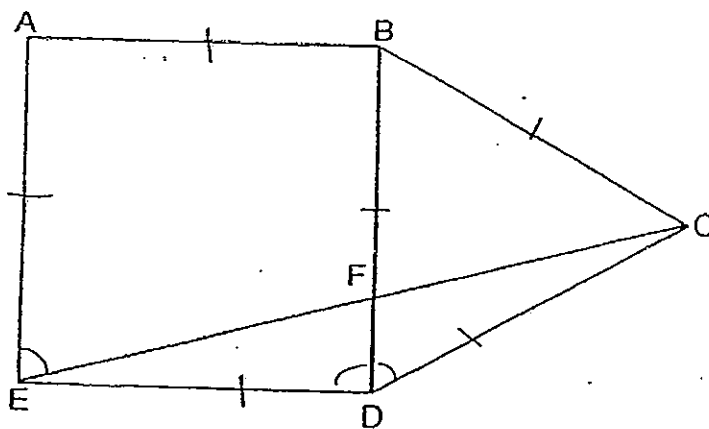


Ans: _____ cm^3

28. The mass of Lucy is 45 kg.
 The average mass of Nathan and Mary is $7w$ kg.
 What is the average mass of the 3 children?

Ans: _____ kg

29. In the diagram below, ABDE is a square and BCD is an equilateral triangle. CFE is a straight line. Find $\angle AEF$.



Ans: _____ °

30. The highest common factor of two numbers is 4 and the lowest common multiple is 48. The smaller number is 12. What is the other number?

-End of Paper-

Please check your work carefully ☺



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

Name: _____ ()

Form class: P6 _____

Date: 20 August 2013

Duration: 1 h 40 min

Your Score (Out of 60 marks)	
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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. Patsy bought $31p$ beads. She put them into 7 boxes and had 6 beads left.

(a) Express the number of beads in each box in terms of p .

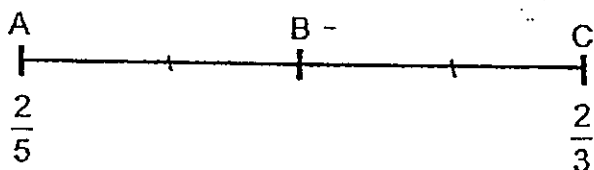
(b) Given that the value of p is 9, how many beads were there in each box?

Ans: (a) _____ [1]

(b) _____ [1]

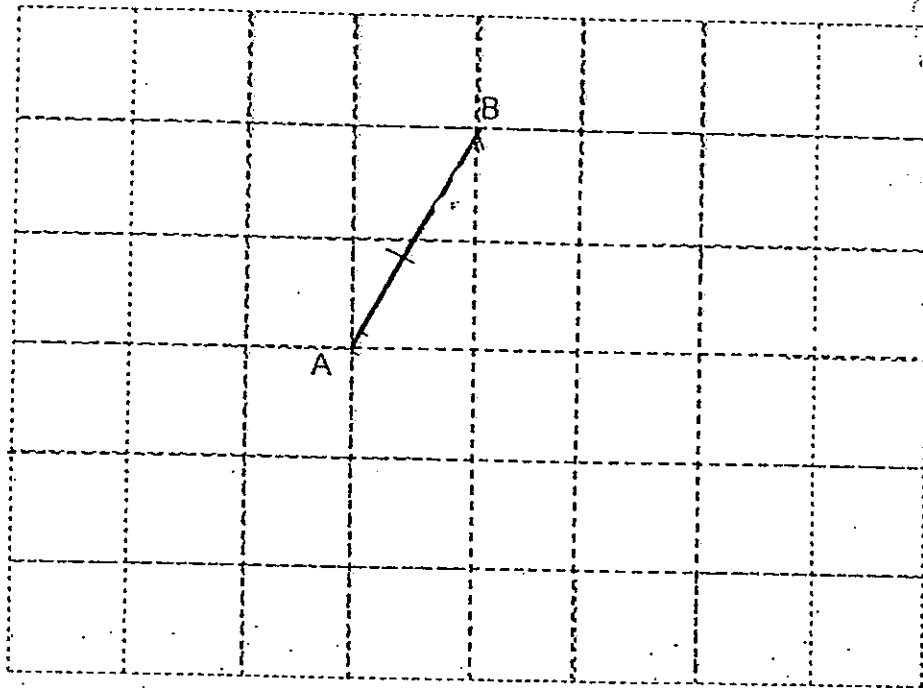
2. In the number line below, A represents $\frac{2}{5}$, C represents $\frac{2}{3}$. $AB = BC$.

What fraction is represented by B?



Ans: _____ [2]

3. Construct an isosceles right-angled triangle ABC, such that $\angle ABC = 45^\circ$.



4. Anthony had \$2 more than Grace. If Grace had \$4 more than Anthony, she would have 25% more money than him. How much money did Grace have?

Ans: \$ _____ [2]

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

$$43 - 6 \times \boxed{?} - (51 - 27) = 1$$

Ans: _____ [2]

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. Mrs Lim usually spent \$290 on several bottles of vitamin at Healthway Pharmacy. During a storewide discount of 20%, Mrs Lim found that she could buy 2 additional bottles of vitamins with the same amount of money. Find the cost of a bottle of vitamin before the discount.

Ans: _____ [3]

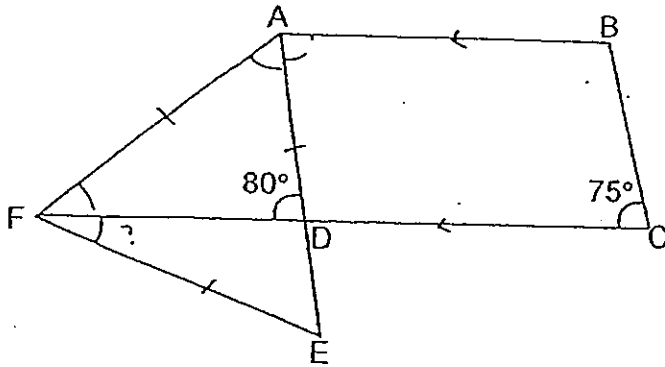
7. Alex had \$48w and Bob had \$40w. After they received an equal amount of money from their parents, they had \$1244 altogether.

- (a) How much did Bob receive from his parents in terms of w?
(b) Given that $w = 11$, find the amount of money that Bob had in the end.

Ans: (a) _____ [2]

(b) _____ [1]

8. In the diagram below, $ABCF$ is a trapezium and AEF is an equilateral triangle. Find
- (a) $\angle BAD$
 - (b) $\angle DFE$



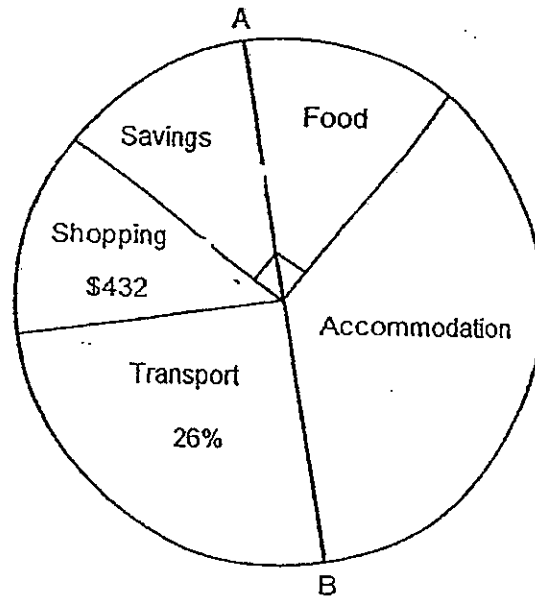
Ans: (a) _____ [1]

(b) _____ [2]

9. The total number of beads Charis, Fatin and Kelissa had was 546. The total number of beads Charis and Fatin had was twice that of Kelissa. Fatin had $\frac{1}{3}$ as many beads as Charis. How many beads did Charis have?

Ans: _____ [3]

10. The pie chart below shows how Jason spent his salary in a month. AB is a straight line. The amount he spent on transport is twice as much as the amount he spent on food.

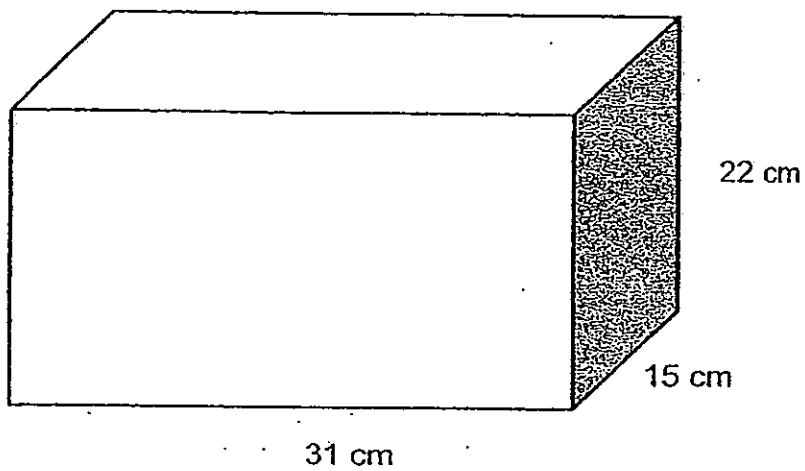


- (a) What percentage of his salary did he spend on shopping in that month?
(b) What was the total amount spent on transport and accommodation?

Ans: (a) _____ [1]

(b) _____ [2]

11. Billy needs to pack as many 4-cm wooden cubes as possible into a box measuring 31 cm by 15 cm by 22 cm as shown below.
- (a) What is the maximum number of wooden cubes that can be packed into the box?
 - (b) What is the volume of the remaining space in the box after the maximum number of wooden cubes has been packed in?



Ans: (a) _____ [2]

(b) _____ [2]

12. There were $\frac{5}{7}$ as many boys as girls in the theatre. When $\frac{1}{2}$ of the boys and $\frac{1}{5}$ of the girls left the theatre, there were 62 more girls than boys remaining in the theatre.

(a) Find the ratio of the number of boys who left the theatre to the number of girls who left the theatre?

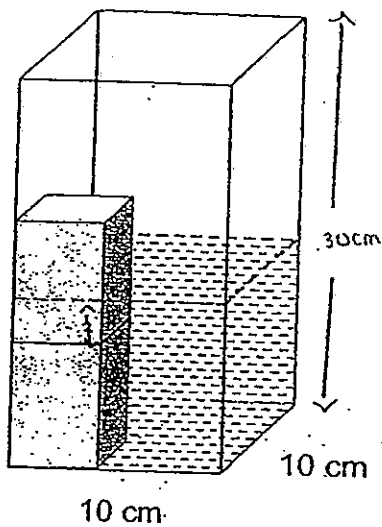
(b) How many girls left the theatre?

Ans: (a) _____ [2]

(b) _____ [2]

13. A tank measuring 10 cm by 10 cm by 30 cm had 2 identical cuboids in it. Water was flowing into the tank for 5 minutes at a rate of 240 cm^3 per minute. Each cuboid had a dimension of 5 cm by 5 cm by 10 cm.

- (a) What was the height of the water in the tank?
- (b) What was the height of the water in the tank when the top cuboid was taken out from the tank?



Ans: (a) _____ [2]

(b) _____ [2]

14. Siva had a roll of ribbon. She cut the ribbon into shorter pieces of different lengths. When she arranged the shorter pieces of ribbons in ascending order of their lengths, the difference in length between any 2 consecutive pieces was 1.35 cm.
- (a) The length of the third shortest piece of ribbon was 4.45 cm. What was the total length of the first 5 pieces of ribbon, starting from the shortest piece? Give your answer in centimetre.
- (b) The difference in length between the shortest piece of ribbon and the longest piece of ribbon was 2.16 m. How many pieces of ribbons did Siva cut?

Ans: (a) _____ [3]

(b) _____ [2]

15. Town A and Town B are 420 km apart. At 9 a.m., a truck left Town A for Town B, travelling at an average speed of 40 km/h. At 10.30 a.m., a car left Town A for Town B, travelling at an average speed of 60 km/h. At the same time when the car overtook the truck, a cyclist left Town B and cycled towards Town A at an average speed of 30 km/h.

(a) At what time did the car catch up with the truck on the way to Town B?

(b) At what time would the cyclist meet the car along the way?

Ans: (a) _____ [2]

(b) _____ [2]

16. The ratio of the number of adults to the number of children in an event hall was 5 : 7.

(a) After 60 adults and 84 children entered the event hall and no one left the event hall, what was the ratio of the number of adults to the number of children in the event hall?

(b) A while later, 56 adults and 56 children left the event hall and the ratio of the number of adults to the number of children became 7 : 13.
How many children were there in the event hall at first?

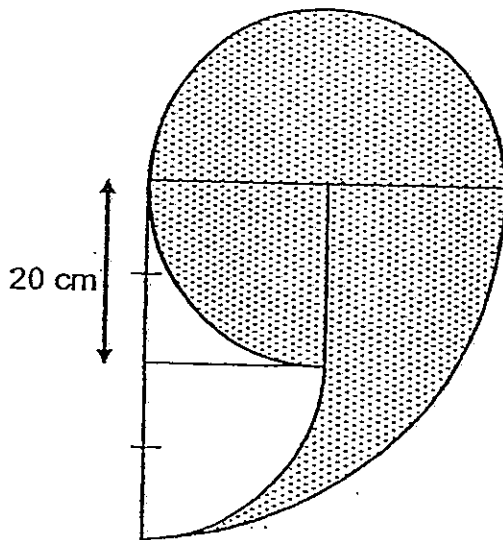
Ans: (a) _____ [1]

(b) _____ [3]

17. The figure below is made up of a semicircle, a square and 3 quadrants. The side of the square is 20 cm.

For each of the following, use the calculator value of π to find

- (a) the area of the shaded part, correct to 2 decimal places,
(b) the perimeter of the shaded part, correct to 2 decimal places.



Ans: (a) _____ [3]

(b) _____ [2]

18. At a party, 30% of the balloons were red, 70% of the remaining balloons were blue and the rest were yellow. There were 152 more blue balloons than red balloons. After some blue balloons burst, 60% of the remaining balloons were red and yellow. How many blue balloons burst?

Ans: _____ [5]

-End of Paper-

Please check your work carefully ☺.

Exam Paper 2013 Answer Sheet

School: RAFFLES GIRLS' PRIMARY SCHOOL
Subject: PRIMARY 6 MATHEMATICS
Term: PRELIM

Paper 1

1) 4	6) 2	11) 2
2) 2	7) 3	12) 3
3) 4	8) 4	13) 3
4) 3	9) 1	14) 1
5) 2	10) 1	15) 2

16. 96

17. $\frac{1}{27}$

18. 7.3

19. 82

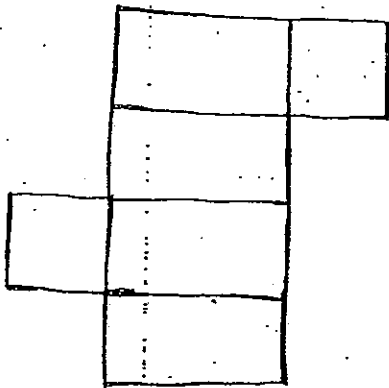
20. 64

21. 400

22. $\frac{3}{13}$

23. 1.9

24.



25. 1 : 6

26. 330

27. 200

28. $(\frac{14w + 45}{3})$

29. 75

30. 16

Paper 2

1. (a) (${}^{31}P - {}^6I_7$) beads

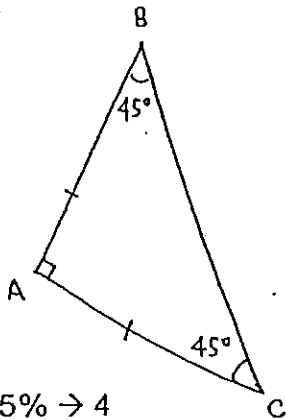
(b) 39 beads

2. $\frac{2}{3} - \frac{2}{5} = \frac{4}{15}$

$\frac{4}{15} \div 2 = \frac{2}{15}$

$\frac{2}{15} + \frac{2}{5} = \frac{8}{15}$

3.



4. $25\% \rightarrow 4$
 $100\% \rightarrow 16$
 $16 - 12 = 14$

5. $51 - 27 = 24$
 $24 + 1 = 25$
 $43 - 25 = 18$
 $18 \div 6 = 3$

6. $\frac{1}{5} \times \$290 = \58
 $\$58 \div 2 = \$29 \rightarrow 80\%$
 $10\% \rightarrow \frac{29}{8}$
 $100\% \rightarrow \frac{29}{8} \times 10 = \36.25

7. (a) $48w + 40w = 88w$
 $\$(\frac{1244 - 88w}{2})$

(b) $1244 - 8 \times 11 = 1156$
 $1156 \div 2 = \$578$

8. (a) 80°

(b) $180^\circ - 80^\circ - 60^\circ = 40^\circ$
 $60^\circ - 40^\circ = 20^\circ$

9. $4u + 2u = 6u \rightarrow 546$

$$3u \rightarrow 546 \div 2 = 273 \text{ beads}$$

10. (a) $25\% - 13\% = 12\%$

(b) $50\% - 26\% - 12\% = 12\% \rightarrow \432

$$3\% \rightarrow \$432 \div 4 = \$108$$

$$63\% \rightarrow \$108 \times 21 = \$2268$$

11. (a) $31 \div 4 = 7 \text{ R } 3$

$$15 \div 4 = 3 \text{ R } 3$$

$$22 \div 4 = 5 \text{ R } 2$$

$$7 \times 3 \times 5 = 105 \text{ cubes}$$

(b) $105 \times 4 \times 4 \times 4 = 6720$

$$31 \times 15 \times 22 = 10230$$

$$10230 - 6720 = 3510 \text{ cm}^3$$

12. B : G

$$5 : 7$$

$$10 : 14$$

$$50 : 70$$

$$25u \quad 56u$$

$$\frac{1}{5} \times 70 = 14$$

(a) $25 : 14$

(b) $56u - 25u = 31u \rightarrow 62$

$$1u \rightarrow 62 \div 31 = 2$$

$$14u \rightarrow 14 \times 2 = 28 \text{ girls}$$

13. (a) $240 \times 5 = 1200$

$$10 \times 10 = 100$$

$$5 \times 5 = 25$$

$$100 - 25 = 75$$

$$1200 \div 75 = 16 \text{ cm}$$

(b) $10 \times 10 \times 6 = 600$

$$5 \times 5 \times 6 = 150$$

$$600 - 150 = 450$$

$$450 \div (10 \times 10) = 4.5$$

$$4.5 + 10 = 14.5 \text{ cm}$$

14. (a) $4.45 - 1.35 - 1.35 = 1.75$

$$1.75 \times 5 = 8.75$$

$$1.35 \times 10 = 13.5$$

$$13.5 + 8.75 = 22.25 \text{ cm}$$

(b) $216 \div 1.35 = 160$

$$160 + 1 = 161$$

15. T : C

4 : 6

2 : 3 (speed)

3 : 2 (time)

1u \rightarrow 1½ h

2u \rightarrow 3 h

(a) 10.30 am \rightarrow 1.30 pm

(b) 60 km/h \times 3 h = 180 km

420 - 180 = 240

60 + 30 = 90 km/h

240 \div 90 = 2½ h

1.30 pm \rightarrow 4.10 pm

16. (a) 60 + 5 = 65

84 + 7 = 91

A : C

65 : 91

5 : 7

(b) 8u \rightarrow 56

1u \rightarrow 7

21u \rightarrow 7 \times 21 = 147

147 - 84 = 63

17. (a) $\frac{3}{4} \times \pi \times 20 \times 20 = 300\pi$

$\frac{1}{4} \times \pi \times 40 \times 40 = 400\pi$

20 \times 20 = 400

$\frac{1}{4} \times \pi \times 20 \times 20 = 100\pi$

400 π - 100 π - 400 = 300 π - 400

300 π - 400 + 300 π \approx 1481.96 cm² -

(b) $\pi \times 40 = 40\pi$

$\pi \times \frac{1}{4} \times 80 = 20\pi$

20 π + 40 π \approx 188.50 cm

18. R : B : Y

30 : 70

7 : 3

49 : 21

49u - 30u = 19u \rightarrow 152

49u - 34u = 15u

1u \rightarrow 152 \div 19 = 8

15u \rightarrow 15 \times 8 = 120 blue balloons