

METHODIST GIRLS' SCHOOL

Founded in 1887



PRELIMINARY EXAMINATION 2011 PRIMARY 6 MATHEMATICS

PAPER 1 (BOOKLET A)

Total Time for Booklets A and B: 50 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Shade your answers in the Optical Answer Sheet (OAS) provided.

The use of calculators is **NOT** allowed.

Name: _____ ()

Class: Primary 6. _____

Date: 24 August 2011

This booklet consists of 8 printed pages including this page.

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 the oval (1, 2, 3 or 4) on the Optical Answer Sheet.
(20 marks)

1 Find the value of $18 + 3 + 1 \times 5 - 3$.

- (1) 23
- (2) 30
- (3) 42
- (4) 102

2 Find the value of $82.036 \div 4$.

- (1) 2.59
- (2) 20.59
- (3) 20.059
- (4) 20.509

3 A greengrocer sells tomatoes in packets of 4 for \$1.60. How many tomatoes can Mrs Tan buy with \$10.00?

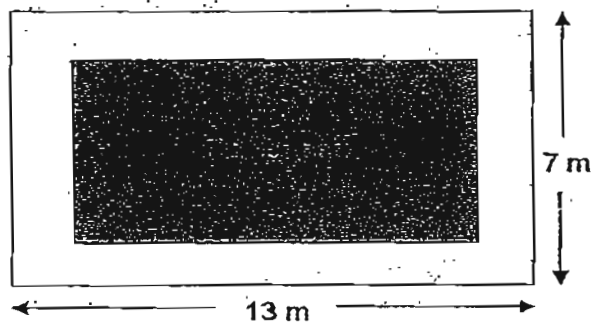
- (1) 6
- (2) 24
- (3) 25
- (4) 28

(Go on to the next page)

- 4 A musical performance lasted for 1 hour 30 minutes. Stella left the theatre at 9.05 p.m. At what time did the musical performance begin?

- (1) 7.35 p.m.
- (2) 8.05 p.m.
- (3) 8.35 p.m.
- (4) 10.35 p.m.

- 5 The figure shows a rectangular flower bed with a footpath around it. The footpath has a width of 2 m. Find the area of the footpath.

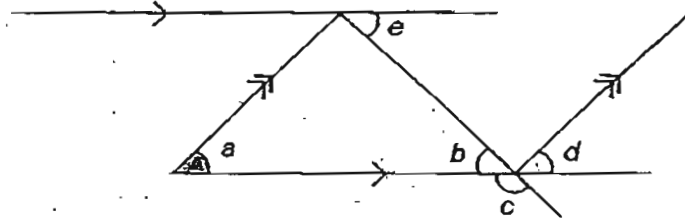


- (1) 24 m^2
 - (2) 55 m^2
 - (3) 64 m^2
 - (4) 91 m^2
- 6 John bought b number of pencils. Each pencil cost \$0.50. He gave the cashier \$10. Which of the following algebraic expression correctly represents the change that he will receive from the cashier?

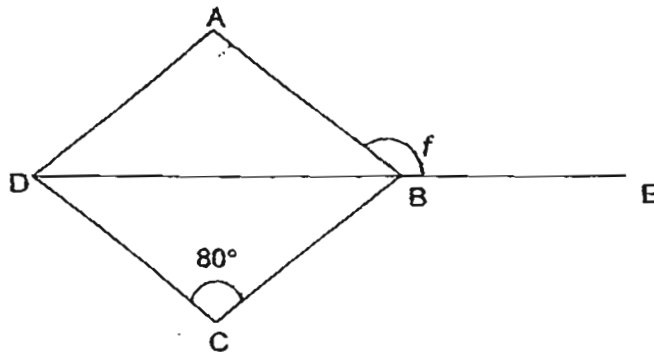
- (1) $\$(50b - 10)$
- (2) $\$(0.50b - 10)$
- (3) $\$(10 - 50b)$
- (4) $\$(10 - 0.50b)$

(Go on to the next page)

- 7 Which angle is equal to $\angle a$?



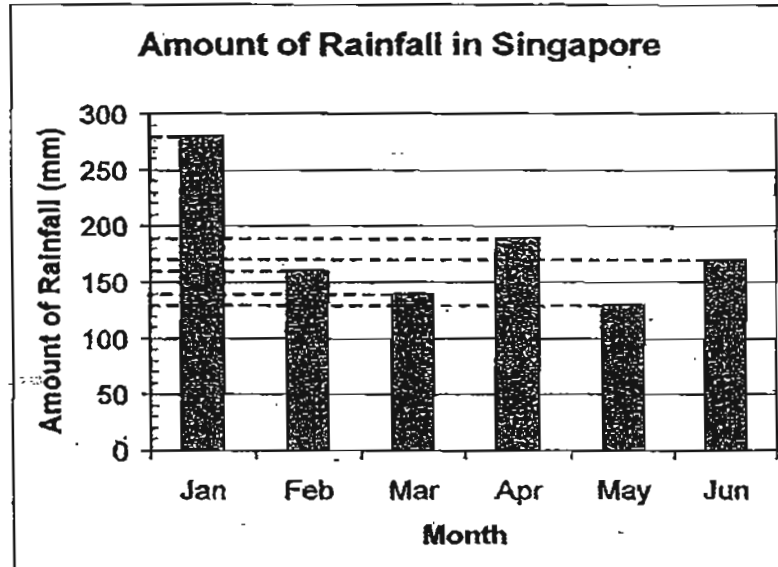
- (1) $\angle b$
 (2) $\angle c$
 (3) $\angle d$
 (4) $\angle e$
- 8 ABCD is a rhombus. DE is a straight line. Find $\angle f$.



- (1) 50°
 (2) 80°
 (3) 120°
 (4) 130°

(Go on to the next page)

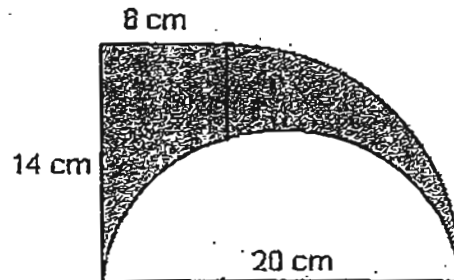
- 9 The bar graph below shows the amount of rainfall recorded in Singapore from January to June. The readings were taken at the end of each month. What was the difference in the amount of rainfall between the highest amount of rainfall recorded and the lowest amount of rainfall recorded?



- (1) 120 mm
 (2) 130 mm
 (3) 140 mm
 (4) 150 mm
- 10 $\frac{1}{4}$ of Felicia's stamps is equal to $\frac{3}{5}$ of Ginny's stamps. If Ginny has 14 fewer stamps than Felicia, how many stamps does Felicia have?
- (1) 6
 (2) 10
 (3) 24
 (4) 34

(Go on to the next page)

- 11 The figure shows a semi-circle, a quadrant and a rectangle.
Find the perimeter of the shaded part. Leave your answer in terms of π .



- (1) 37π cm
 (2) 54π cm
 (3) $(17\pi + 20)$ cm
 (4) $(34\pi + 20)$ cm
- 12 What is the average length of 3 pencils?



- (1) 7 cm
 (2) 8 cm
 (3) 9 cm
 (4) 10 cm

- 13 The following recipe shows the ingredients needed to bake 1 cake.

Flour	400g
Eggs	1
Sugar	250g
Butter	300g

Mary went to the supermarket and bought half a dozen of eggs, 1 kg of sugar, 2 kg of flour and 1.5 kg of butter. What is the maximum number of cakes that she can bake?

- (1) 6
- (2) 5
- (3) 3
- (4) 4

- 14 The table below shows the timings of 5 boys for a 100-metre race.

Name	Time
Dennis	13.80s
Eric	12.30s
Fandi	12.45s
Gurmit	10.80s
Hock Seng	11.20s

Which boy's timing is 1.5s faster than Eric?

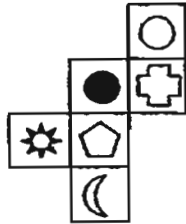
- (1) Dennis
- (2) Fandi
- (3) Gurmit
- (4) Hock Seng

(Go on to the next page)

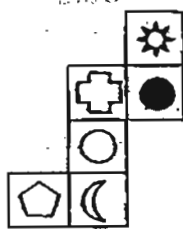
15 Which of the following is a possible net of the cube shown below?



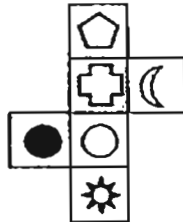
(1)



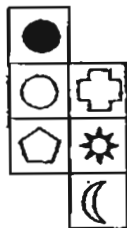
(2)



(3)



(4)



METHODIST GIRLS' SCHOOL

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PRELIMINARY EXAMINATION 2011 PRIMARY 6 MATHEMATICS

PAPER 1 (BOOKLET B)

Total Time for Booklets A and B: 50 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Write your answers in this booklet.

The use of calculators is **NOT** allowed.

Name: _____ ()

Class: Primary 6. _____

Date: 24 August 2011

Paper 1 Booklet A	/ 20
Paper 1 Booklet B	/ 20
Paper 2	/ 60
TOTAL	/ 100

This booklet consists of 9 printed pages including this page.

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.

(10 marks)

16 What is the missing number in the box?

$$36 \times 6 + 6 \times 14 = (\square - 6) \times 6 + 25 \times 6$$

Ans: _____

17 Arrange the following fractions in descending order.

$$\frac{4}{9}$$

$$\frac{2}{17}$$

$$\frac{4}{15}$$

Ans: _____

(Go on to the next page)

- 18 Express 15 km 2 cm in metres.

Ans: _____ m

- 19 Janie has some fifty-cent and twenty-cent coins. She has twice as many twenty-cent coins as fifty-cent coins. If the total value of the coins is \$3.60, how many fifty-cent coins does Janie have?

Ans: _____

- 20 Mdm Aminah mixes 80 ml of syrup with 1.5 l of water. She then pours the mixture into 4 containers. How much of the mixture is in each container?

Ans: _____ l

(Go on to the next page)

- 21 Water flows from a tap at a rate of 4ℓ per minute into a tank measuring 50 cm by 20 cm by 30 cm . How long will it take to fill up $\frac{2}{3}$ of the tank?

Ans: _____ min

- 22 $\frac{5}{7}$ of Jia Li's money is the same as $\frac{1}{6}$ of Kurian's money. Lionel has half as much money as Kurian. What is the ratio of Kurian's money to Jia Li's money to Lionel's money?

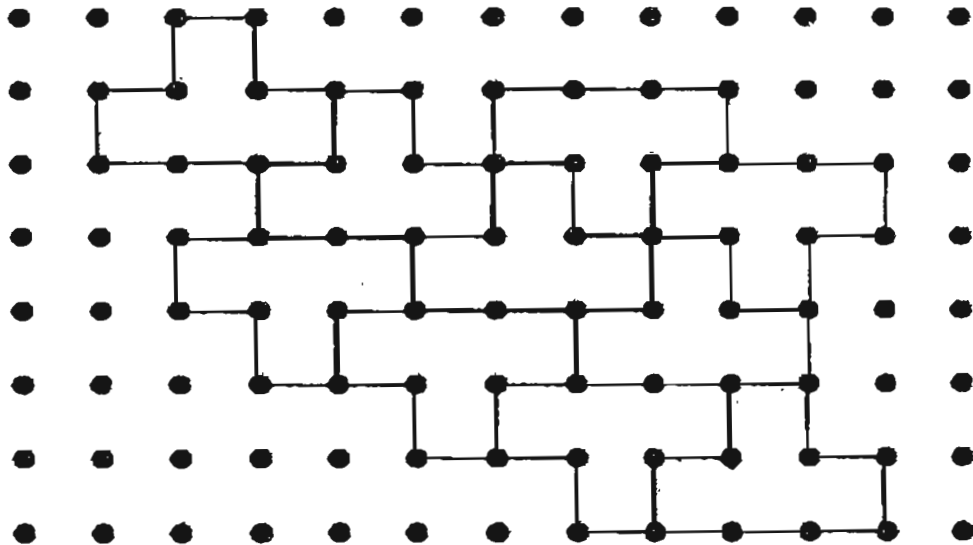
Ans: _____

(Go on to the next page)

- 23 A bottle of Ribena, which contains 750 ml of concentrated syrup, can make 45 100 ml cups of Ribena drink. How many bottles of Ribena must Siew Lee buy if she wants to make 150 cups of Ribena drink?

Ans: _____

- 24 The shape  can be tessellated. Shade the unit shape that does not fit into the tessellation.



(Go on to the next page)

25 Which shape has the following characteristics?

- a. It has 2 pairs of parallel lines
- b. Diagonally opposite angles are equal
- c. The diagonal divides the shape into 2 identical isosceles triangles.

Ans: _____

(Go on to the next page)

Questions 26 to 30 carry 2 marks each. Show your working clearly in the space below each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

(10 marks)

-
- 26 Kenneth goes to the library once every 6 days.
Leonard goes to the library once every 8 days.
If they last met each other at the library on 1 July, on which day would they meet at the library again?

Ans: _____

- 27 Alice has 3 times as much money as Harold. If Alice spends \$65 and Harold spends \$17, they will have an equal amount of money left. How much money does Harold have at the end?

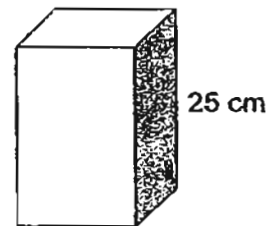
Ans: \$ _____

(Go on to the next page)

- 28 The area of a circle is 154 cm^2 . Find its diameter.
[Take $\pi = \frac{22}{7}$]

Ans: _____ cm

- 29 The volume of the square-based cuboid is $10\,000 \text{ cm}^3$.
The height of the cuboid is 25 cm . Find the area of the shaded face.



Ans: _____ cm^2

(Go on to the next page)

- 30 The music store gave a 10% discount off the usual price of their CDs in celebration of their tenth anniversary. Raj paid the cashier \$18 after the discount. What was the usual price of the CD?

Ans: \$ _____

End of Paper

METHODIST GIRLS' SCHOOL
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PRELIMINARY EXAMINATION, 2011
PRIMARY 6
MATHEMATICS

PAPER 2

Duration: 1 h 40 min

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

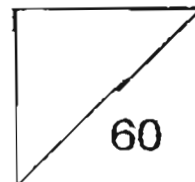
Write your answers in this booklet.

The use of an approved calculator is expected, where appropriate.

Name: _____ ()

Class: Primary 6. _____

Date: 24 August 2011



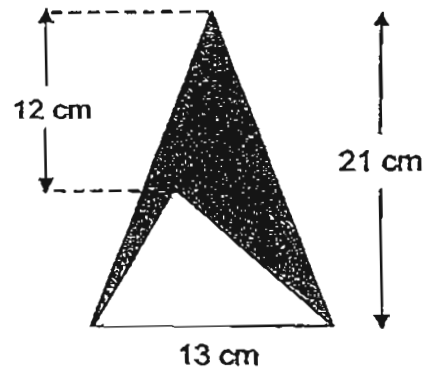
This booklet consists of 16 printed pages including this page.

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 A test consists of 25 questions. A correct answer is worth 4 marks. An incorrect answer will result in a deduction of 2 marks. Li Meng scored 70 marks. How many questions did Li Meng answer **incorrectly**?

Ans: _____

- 2 The figure below is not drawn to scale. Find the area of the shaded region.



Ans: _____

(Go on to the next page)

- 3 Mary can type at a speed of 160 words per minute. How long will she take to type a passage that has 2 048 words?

Ans: _____ min _____ s

- 4 Which of the following letter(s) has/have at least 2 lines of symmetry?

H O M E

Ans: _____

(Go on to the next page)

- 5 The table below shows the rates charged by a taxi company.

Distance	Fare
First 1 km or less	\$3.00
Every 385 m or part thereof	\$0.20

Siva took a taxi to his office. If the distance between Siva's house and his office is 15.5 km, how much was his taxi fare?

Ans: \$ _____

(Go on to the next page)

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)

- 6 Ann is 8 years old. When she reaches her mother's present age, her mother would be 62 years old. How old is Ann's mother now?

Ans: _____ [3]

- 7 Henry spends 35% of his salary on transport. Of the remainder, he spends \$500 on food, 40% on rent, 16% on miscellaneous items and he saves the rest. If he earns \$4 500 every month, how long will he take to save enough to buy a computer which costs \$1 650?

Ans: _____ [3]

(Go on to the next page)

- 8 The average mass of Bala, Craig and Eddie is $(4d + 50)$ kg. Craig is one and a half times as heavy as Bala and twice as heavy as Eddie.
- (a) What is the total mass of the 3 boys?
Give your answer in terms of d .
- (b) If $d = 13$, what is Eddie's mass? Give your answer to 2 decimal places.

Ans: (a) _____ [1]
(b) _____ [3]

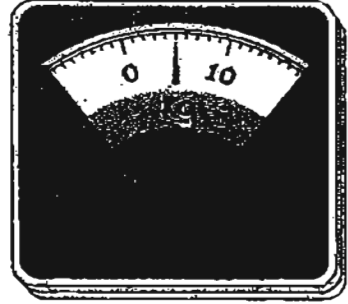
(Go on to the next page)

- 9 Su Lin has 259 fiction and non-fiction books altogether. Of these books, 98 are hard cover books. $\frac{3}{5}$ of her fiction books have hard covers while $\frac{3}{4}$ of her non-fiction books have soft covers. How many fiction books does Su Lin have?

Ans: _____ [5]

(Go on to the next page)

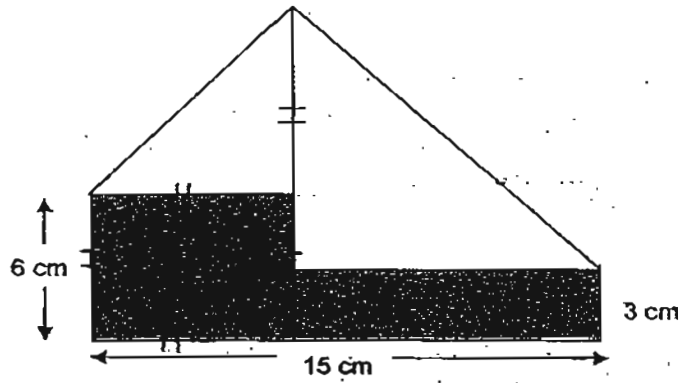
- 10 Ali, Ben and Carl weighed themselves using a defective bathroom scale as shown in the diagram. The average mass of the 3 boys was 72.6 kg. Given that Ben is $\frac{2}{3}$ of Ali's mass and Carl is $\frac{4}{5}$ of Ben's mass, what is Carl's actual mass?



Ans: _____ [3]

(Go on to the next page)

- 11 A rectangular piece of cardboard is folded as shown in the diagram. Find the shaded area.



Ans: _____ [3]

(Go on to the next page)

- 12 The distance between Town A and Town B is 116 km. A bus left Town A and headed for Town B. Some time later, a car left Town A and headed for Town B along the same route. Along the way, the car overtook the bus and arrived at Town B 45 minutes earlier than the bus. When the car arrived at Town B, the bus had travelled $\frac{5}{8}$ of the distance. What was the speed of the ~~car?~~
bus

Ans: _____ [4]

(Go on to the next page)

- 13 Tank A measures 30 cm by 20 cm by 24 cm. It contains $12\,600\text{ cm}^3$ of water. Tank B has a square base of length 25 cm and is filled with water up to a height of 14.2 cm. The water in Tank A is then poured into Tank B until the water levels in both tanks are the same.

- (a) What is the water level in Tank B at the end?
- (b) Water is then poured from Tank B back into Tank A such that the water level in Tank A is 1.5 times the water level in Tank B. What is the water level in Tank A? Give your answer, correct to 2 decimal places.

Ans: (a) _____ [2]

(b) _____ [3]

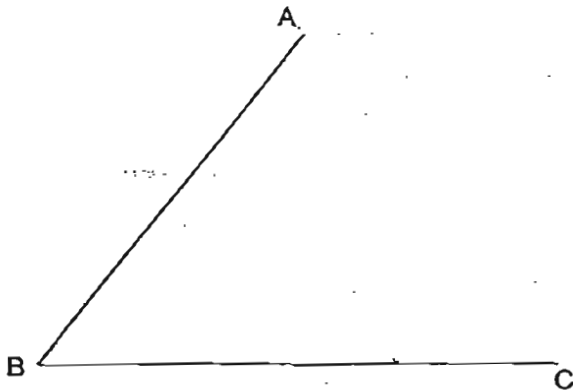
(Go on to the next page)

14 In the figure below. AB and BC are straight lines.

(a) Measure and write down the size of $\angle ABC$.

(b) Draw a trapezium ABCD, such that AD is 7.5 cm and is parallel to BC. Label the point D.

(c) What is the length of CD?



Ans: (a) _____ [1]

(b) _____ [1]

(c) _____ [1]

(Go on to the next page)

- 15 Sharif and Raj had some picture cards. After Sharif gave $\frac{2}{5}$ of his cards to Raj, he had $\frac{1}{3}$ of the total number of picture cards. If Raj had 144 picture cards in the end,
- (a) how many pictures did he receive from Sharif?
(b) How many more picture cards did Raj have than Sharif in the end?

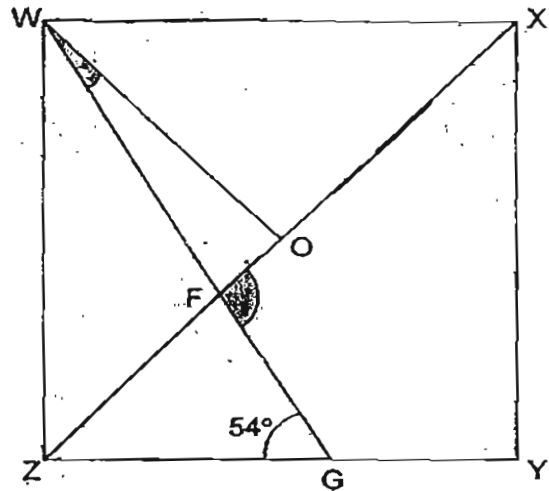
Ans: (a) _____ [2]

(b) _____ [2]

(Go on to the next page)

- 16 In the diagram below, not drawn to scale, $WXYZ$ is a square. XZ is a straight line and O is mid-way between XZ . Find

- (a) $\angle GFX$
 (b) $\angle FWO$



Ans: (a) _____ [2]

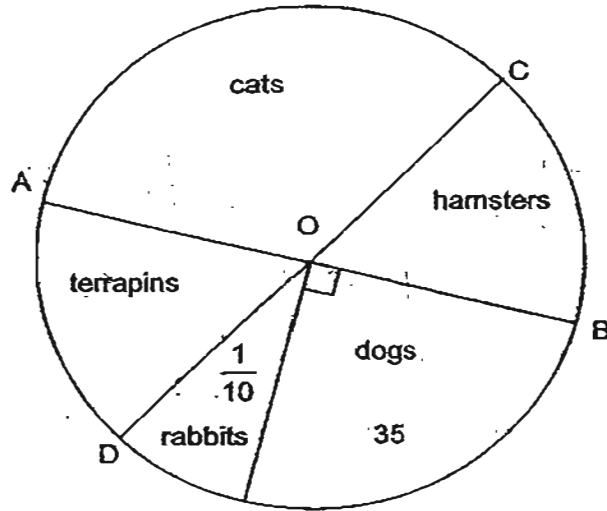
(b) _____ [2]

(Go on to the next page)

- 17 The pie chart shown below shows the number of children who own pets. AOB and COD are straight lines.

(a) How many children keep hamsters as pet?

(b) Express the number of children who keep rabbits as pets as a percentage of the number of children who keep cats as pets. Give your answer correct to 1 decimal place.



Ans: (a) _____ [2]

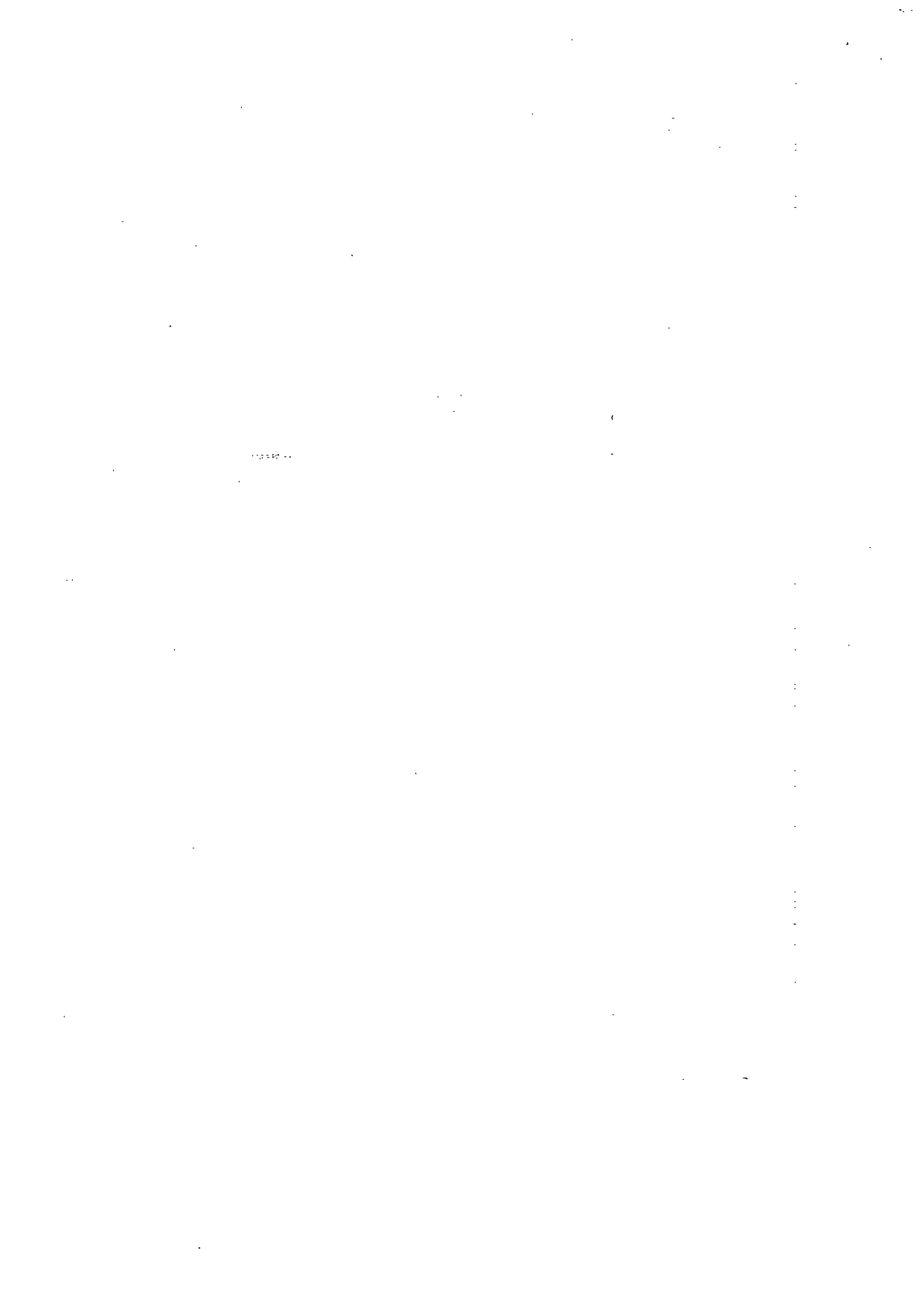
(b) _____ [2]

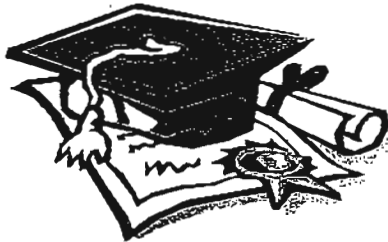
(Go on to the next page)

- 18 Eric and Fandi had some stamps. Eric's number of stamps is $\frac{4}{5}$ of Fandi's number of stamps. Eric gave away 12 of his stamps, while Fandi bought 5 more stamps. In the end, the ratio of Eric's stamps to Fandi's stamps is 2:5. How many stamps did Fandi have in the end?

Ans: _____ [5]

End of Paper



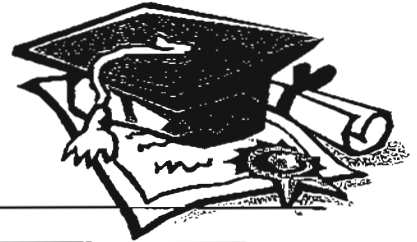


ANSWER SHEET

EXAM PAPER 2011

**SCHOOL : MGS
SUBJECT : PRIMARY 6 MATHEMATICS**

TERM : PRELIMINARY



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

16)31

17)4/9, 4/15, 2/17

18)15000.02m

19)4

20)0.395L

21)5min

22)30:7:15

23)4

24)

25)rhombus

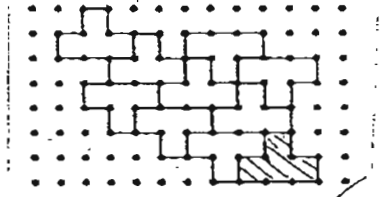
26)25July

27)\$7

28)1.4cm

29)500cm²

30)\$20



Paper 2

$$1) 25 \times 4 = 100$$

$$100 - 70 = 30$$

$$30 \div 6 = 5$$

$$2) \frac{1}{2} \times 13 \times 21 = 136.5$$

$$\frac{1}{2} \times 13 \times (21 - 12) = 58.5$$

$$136.5 - 58.5 = 78\text{cm}^2$$

$$3) 2048 \div 160 = 12.8$$

$$0.8\text{min} = 48\text{sec}$$

Ans: 12min 28s

4)H,O

$$5) 15.5 - 1 = 14.5$$

$$14.5\text{km} = 14500$$

$$14500 \div 385 = 37\frac{51}{77}$$

$$38 \times 0.2 + 3 = \$10.60$$

$$6) 62 - 8 = 54$$

$$54 \div 2 = 27$$

$$8 + 27 = 35$$

$$7) 65\% \times 4500 = 2925(\text{remainder})$$

$$40\% \times 2925 = 1170(\text{rent})$$

$$16\% \times 2925 = 468(\text{mis})$$

$$2925 - 1170 - 500 - 468 = 787(\text{save})$$

$$1650 \div 787 \approx 3$$

$$8) a) (4d+50) \times 3 = 12d + 150$$

Their total mass is $(12d+150)\text{kg}$

$$b) 12d + 150 = 12 \times 13 + 150 = 306$$

$$306 \div 13 = 23\frac{7}{13}$$

$$23\frac{7}{13} \times 3 = 70\frac{8}{13} \approx 70.615 \approx 70.62$$

Eddie's mass is 70.62kg

$$\begin{aligned}
 9) & 3F + 1NF \rightarrow 98 \\
 & 2F + 3NF \rightarrow 161 \\
 & 9F + 3NF \rightarrow 294 \\
 & 7F + 294 - 161 = 133 \\
 & 1F \rightarrow 133 \div 7 = 19 \\
 & 5F \rightarrow 19 \times 5 = 95
 \end{aligned}$$

Su Lin has 95 fiction books.

$$\begin{aligned}
 11) & 15 - 6 = 9 \\
 & (9 \times 3) + (6 \times 6) = 63 \\
 & \text{The shaded area is } 63 \text{ cm}^2
 \end{aligned}$$

$$\begin{aligned}
 10) & 72.6 \times 3 = 217.8 \\
 & 217.8 - 15 = 202.8 \\
 & 202.8 \div 33 = 6\frac{8}{55} \\
 & 1u \rightarrow 6\frac{8}{55} \text{ kg} \\
 & 6\frac{8}{55} \times 8 = 49\frac{9}{55} \text{ kg}
 \end{aligned}$$

$$\begin{aligned}
 12) & 116 \div 8 = 14.5 \text{ (1u)} \\
 & 14.5 \times 3 = 43.5 \\
 & 43.5 \div 45/60 = 58 \\
 & \text{The speed of the bus is } 58 \text{ km/h.}
 \end{aligned}$$

$$\begin{aligned}
 13) a) & 30 \times 20 \times 24 = 14400 \\
 & 30 \times 20 = 600 \text{ (base area A)} \\
 & 25 \times 25 \times 11.2 = 7000 \text{ (amount of water already in B)} \\
 & 25 \times 25 = 625 \text{ (base area B)} \\
 & 12600 + 7000 = 19600 \\
 & 19600 \div (600 + 625) = 16
 \end{aligned}$$

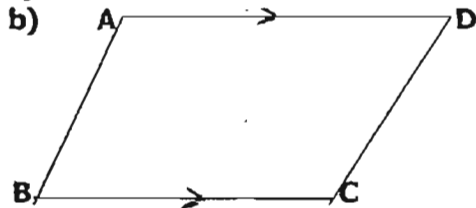
The water level in tank B was 16cm.

$$\begin{aligned}
 b) & \text{Total base area} \rightarrow (600 \times 3) + (625 \times 2) = 3050 \\
 & \text{Height} \rightarrow 19600 \div 3050 = 6\frac{26}{91} \\
 & \text{Height in A} \rightarrow 6\frac{26}{91} \times 3 \approx 19.28
 \end{aligned}$$

$$14) a) 51^\circ$$

$$c) 6.2 \text{ cm}$$

$$7.5 \text{ cm}$$



$$15) a) 144 \div 6 = 24 \text{ (1u)}$$

$$24 \times 2 = 48$$

He received 48 picture cards.

$$b) 24 \times 3 = 72$$

He had 72 more

$$16) a) \angle GFZ = 180^\circ - 45^\circ - 54^\circ = 81^\circ$$

$$\angle GFX = 180^\circ - 81^\circ = 99^\circ$$

$$b) \angle ZWF = 180^\circ - 99^\circ - 45^\circ = 36^\circ$$

$$\angle FWO = 90^\circ - 36^\circ - 45^\circ = 9^\circ$$

$$17) a) 1/10 \times 100\% = 10\%$$

$$50\% - 25\% - 10\% = 15\%$$

$$25\% \rightarrow 35$$

$$1\% \rightarrow 35 \div 25 = 1.4$$

$$15\% \rightarrow 1.4 \times 15 = 21$$

21 children keep hamsters as a pet

$$b) 50\% - 15\% = 35\%$$

$$10\% \rightarrow 1.4 \times 10 = 14$$

$$35\% \rightarrow 49$$

$$14/49 \times 100\% \approx 28.57\%$$

$$\approx 28.6$$

The percentage is 28.6%

$$18) 20u - 60 = 10u + 10$$

$$20u - 10u = 60 + 10$$

$$10u = 70$$

$$1u = 7$$

$$5u = 35$$

$$35 + 5 = 40$$

He had 40 stamps in the end