NANYANG PRIMARY SCHOOL

FIRST SEMESTRAL EXAMINATION 2006

PRIMARY 6

MATHEMATICS

DURATION: 2 HOURS 15 MINUTES

Booklet A	/ 20
Booklet B	/ 30
	/ 50

Total:	/ 100

Name: _____ ( )

Class: Primary 6 ( )

Date: 10 May 2006

Parent's Signature: _____

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

ANSWER ALL QUESTIONS.

28

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 How many grams are there in 9.04 kg?

   (1)   904 g

   (2)   9004 g

   (3)   9040 g

   (4)   9400 g

2 How many tenths make 30.3?

   (1)   303

   (2)   33

   (3)   3

   (4)   30

3 A movie which lasted $2\frac{1}{2}$ h ended at 18 25. At what time did it start?

   (1)   15 55

   (2)   16 55

   (3)   20 55

   (4)   21 55

4 How many of the following letters has/have more than one line of symmetry?

E X M O
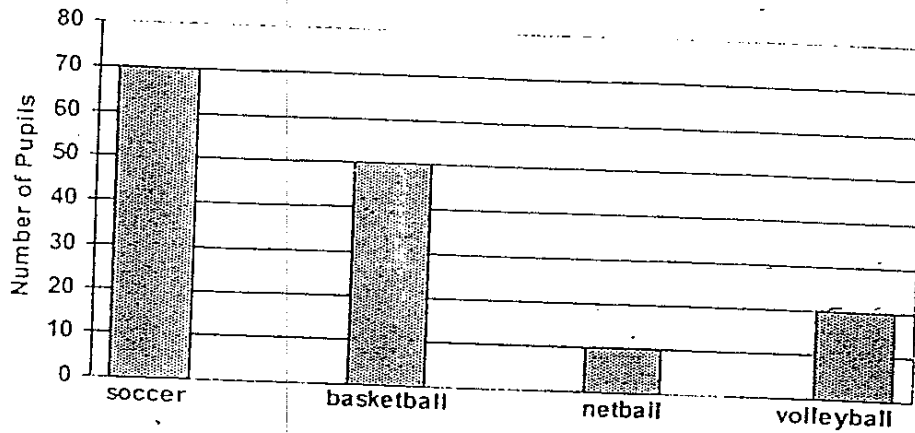
    (1)   1

    (2)   2

    (3)   3

    (4)   4

5 A dictionary is five times as heavy as an exercise book. What is the ratio of the mass of the dictionary to the total mass of the dictionary and the exercise book?

    (1) $1:5$

    (2) $5:1$

    (3) $5:6$

    (4) $6:5$

6 Find the value of $\dfrac{144-2y}{6}$ when $y = 9$.

    (1)   10.5

    (2)   21

    (3)   22.5

    (4)   126

The graph shows the different games played by a group of pupils. Use it to answer questions 7 and 8.

7 How many times as many pupils prefer soccer to basketball?

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

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

(3) $\dfrac{5}{7}$

(4) $\dfrac{2}{7}$

8 What percentage of the pupils prefer volleyball?

(1) $6\dfrac{2}{3}\%$

(2) $12\dfrac{1}{2}\%$

(3) $13\dfrac{1}{3}\%$

(4) $14\dfrac{2}{7}\%$

3

9   Five girl guides were each given 10 tins of cookies to sell. Two of them sold 7 tins each and the rest sold all their cookies. What percentage of the tins of cookies were not sold?

(1)   12%

(2)   30%

(3)   74%

(4)   88%

10   Miss Lim travelled 130 km from Town M to Town P. For the first 2 hours of the journey, she travelled at an average speed of 50 km/h. How much further must she travel to reach Town P?

(1)   25 km

(2)   30 km

(3)   100 km

(4)   105 km

11   A sack of rice was packed into 3 bags in the ratio 3 : 5 : 4. If the mass of the heaviest bag was 30 kg, what was the average mass of the three bags of rice?

(1)   10 kg

(2)   24 kg

(3)   40 kg

(4)   72 kg

4

12   The table shows the number of revolutions made by 4 wheels. Which wheel turned at the slowest rate?

| Wheel	Number of revolutions	Time taken
A	300	1 minute
B	46	6 seconds
C	100	half a minute
D	30	12 seconds

(1)   Wheel A

(2)   Wheel B

(3)   Wheel C

(4)   Wheel D

13   A and B are the centres of the two circles shown in the diagram below. The radius of the big circle is 4.5 cm and the diameter of the small circle is 6 cm. Find the length of AB.
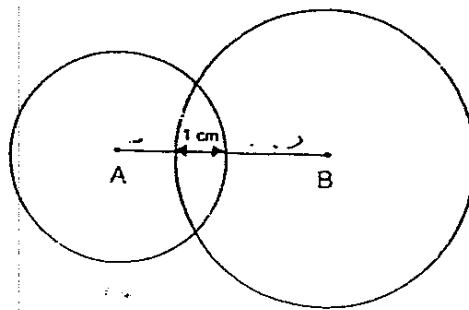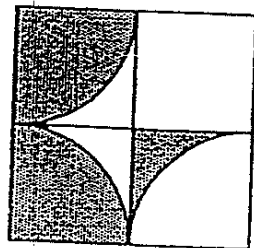

(1)   6.5 cm

(2)   7.5 cm

(3)   9.5 cm

(4)   10.5 cm

14   The figure is made up of an isosceles triangle ABX and a semicircle.
AX = BX = 5 cm and AB = 7 cm.   Find the perimeter of the figure.

(Take $\pi = \dfrac{22}{7}$)
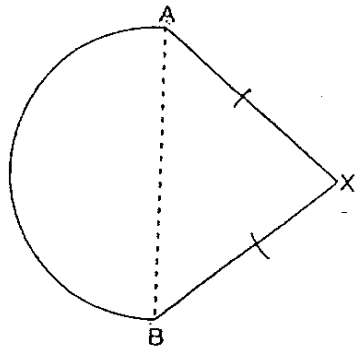
(1)   16 cm

(2)   21 cm

(3)   28 cm

(4)   32 cm

15   The figure is made up of 4 identical squares and 3 identical quadrants, each with a radius of 20 cm.   Find the shaded area.   (Take $\pi = 3.14$)

(1)   431.4 cm²

(2)   478.5 cm²

(3)   714 cm²

(4)   942 cm²

Name: _____ (   ) Class: Pr 6 (   )

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Booklet B

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   Find the total length of 2 ribbons, 1.03 m and $2\frac{2}{5}$ m long. Give your answer as a decimal.

Ans: _____ _____ m

17   Johnson had $50. He used 12% of it to buy a pen. How much money had he left?

Ans: $ _____

18   Aini started working on a project from 10 45 till 14 35. How much time did she spend working on the project?

Ans: _____ h _____ min

7

19   Guo Xin was given 40 ml of mixture. He had to take 10 ml of it every 4 hours. His first dosage was taken at 8.10 a.m. At what time would he take his last dosage?

Ans: _____

20   The figure shows the net of a cube. If the shaded square is the top of the cube, which face is the base of the cube?
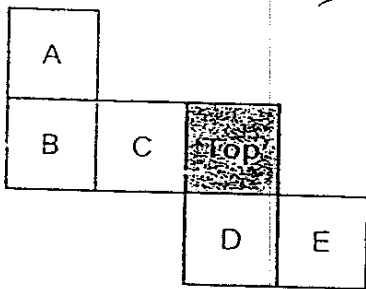
Ans: Face _____

21   The mass of a table is $\frac{5}{6}$ the mass of a cabinet. The mass of a stool is $\frac{1}{3}$ the mass of the cabinet. Find the ratio of the mass of the table to the mass of the cabinet to the mass of the stool.

Ans: _____

8

22 Jack cycles to his school which is $4\frac{1}{2}$ km away from his house. If he cycles at an average speed of 300 m/min, how long will he take to reach the school?
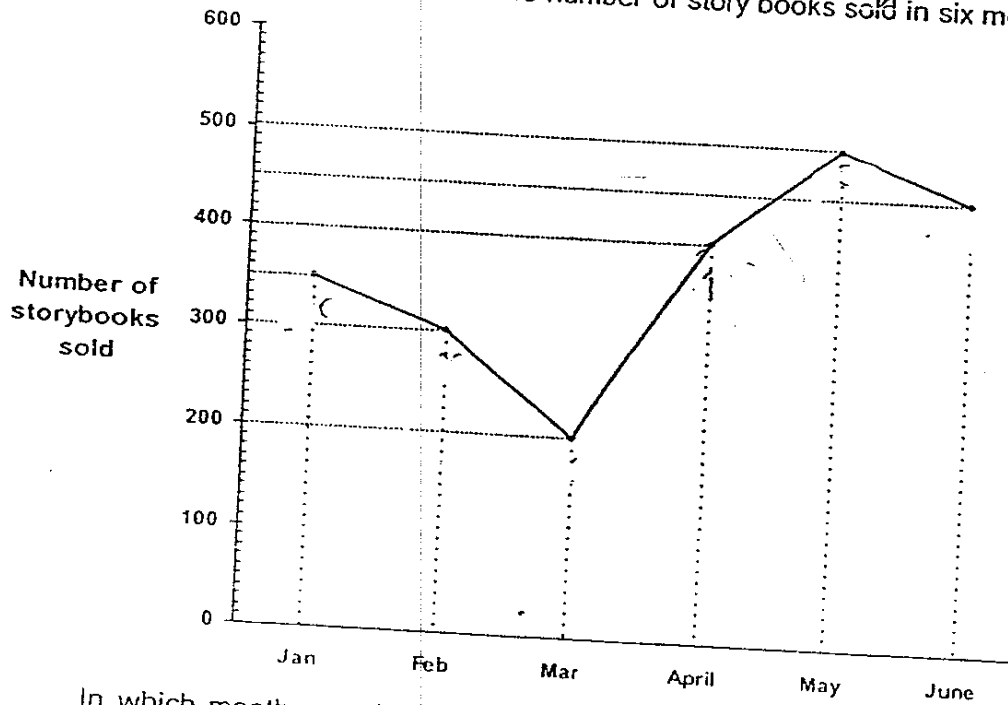
Ans: _____ _____ min

23 A rubber ball with a diameter of 20 cm rolled to a stop after 5 revolutions. Find the distance the ball had moved. (Take $\pi = 3.14$)

Ans: _____ _____ cm

24   The pattern in the box below shows part of a tessellation. Shade the unit shape that <u>should not be included in the tessellation.</u>
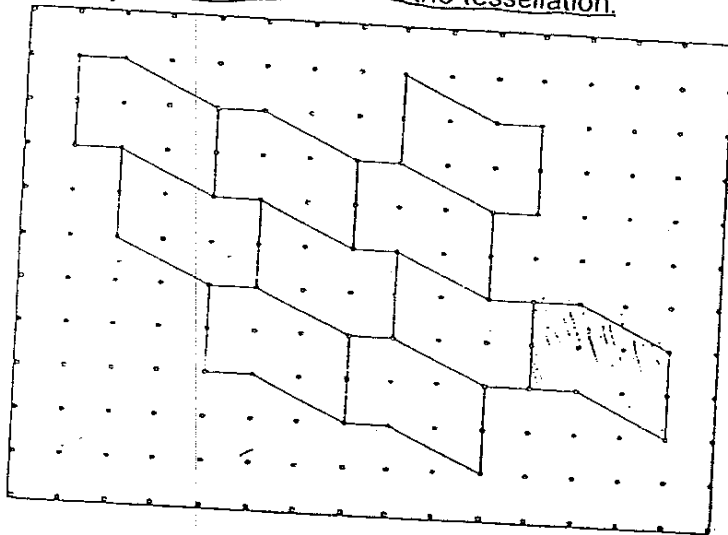
25   The line graph below shows the number of story books sold in six months.

In which month was the sale of storybooks 75% of the sale of books in April?

Ans: _____

Questions 26 to 35 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.

(20 marks)

26   The length of Line A is 250 m. The length of Line B is 0.8 km. Express the length of Line B as a percentage of the length of Line A.

Ans: _____ %

27   A rectangular tank of capacity 60 litres is half filled with water. $5d$ litres of water are added into the tank. Find the volume of water in the tank now.

Ans: _____

28   Velu paid $12.50 for some packs of pens at $2.50 a pack. If there were m pens in each pack, how many pens did Velu buy?

Ans: _____

11

29 Two watches show the same time of 12 o'clock. Both are moving at the same rate. One watch moves in a clockwise direction. The other watch moves in an anti-clockwise direction. At what time will both watches next show the same time?

Ans: _____ o'clock

30 When Carol spent $\frac{1}{5}$ of her money and David spent $\frac{2}{3}$ of his money, they had an equal amount of money left. Express the amount of money Carol had at first as a fraction of the amount of money David had at first.

Ans: _____

31 Meiling was given $42 this week. This amount was a decrease of 30% from what she was given the previous week. How much money was she given in the 2 weeks?

Ans: $ _____

32 Azizah is 10% lighter than Bala. Bala is 10% lighter than Caili. How many percent is Azizah lighter than Caili?

Ans: _____ %

33 10.8 *l* of water are poured into the empty tank shown below. What will be the height of the water level in the tank? (1 *l* = 1000 cm³)


20 cm

30 cm

60 cm
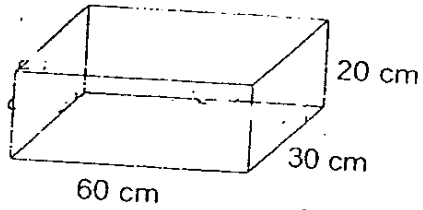
Ans: _____ cm

34 In an auditorium, $\frac{3}{4}$ of the people were females while the rest were males. When some of the females went off during the interval, the number of females in the auditorium was $\frac{5}{8}$ of the total number of people who remained in the auditorium. Find the ratio of the number of females who were present before the interval to the number of females who were present after the interval.

Ans: _____

14

35　The figure shows 2 semi-circles of diameters 8 cm and 4 cm respectively. What is the perimeter of the figure? Leave your answer in terms of π.

Ans: _____ cm

15
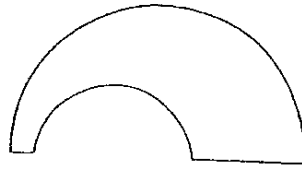
Name: _____( ) Class: Pr 6 ( )

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For questions 36 to 48, show your working clearly in the space provided for each question 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)

36 Mrs Tan bought 5 cups and 2 plates. Each cup cost twice as much as each plate. The total cost of a cup and a plate was $3. How much did she pay for the 5 cups and 2 plates?

Ans: _____ [3]

37 The following pieces are cut from the net of a cuboid. The area of each rectangular piece is 40 cm² and the area of each square piece is 25 cm². Find the volume of this cuboid.
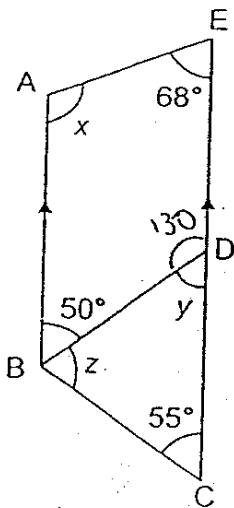
Ans: _____ [3]

16

64
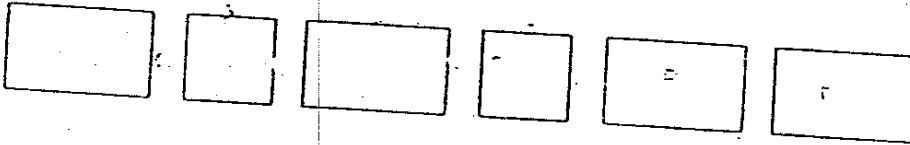
38   Kaili has a total of 6u pens and pencils. If she exchanges every pen for 3 pencils, she will have 110 pencils. How many pencils does she have?

Ans: _____ [3]

39   The figure is not drawn to scale. AB // EC. Find $\angle x$, $\angle y$ and $\angle z$.

Ans: $\angle x$: _____ [1]

$\angle y$: _____ [1]

$\angle z$: _____ [1]

17
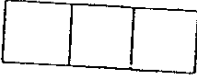
40   Some squares are arranged in the following pattern as shown in the table.

Figure	Number of squares	Perimeter (cm)
	1	4
	2	6
	3	8

(a)   Find the perimeter of the figure which is made up of 10 squares.

(b)   How many squares are needed to form a figure with a perimeter of 224 cm?

Ans: (a) _____ _____ [1]

(b) _____ _____ [2]

46

41 The figure shows a square enclosed in a circle with radius 10 cm. AB and BC are the diameters of the 2 semi-circles inside the square. Find the area of the shaded parts. Leave your answer in terms of π.

A

B

D

C
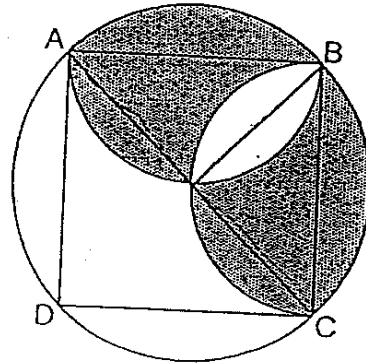
Ans: _____ [3]

42 Mr Wong had just enough money to buy 75 oranges. If the price of each orange was reduced by 5 cents, he would be able to buy 12 more oranges and he would have 15 cents left. How much money did Mr Wong have?

Ans: _____ [4]

43　Mohan and Jacob started cycling at the same time from their school to the park. Mohan cycled at a constant speed of 12 km/h and reached the park in 55 minutes. Jacob, who was also cycling at a constant speed, reached the park 5 minutes earlier than Mohan. Find Jacob's speed in km/h.

Ans: _____ [4]

48

44 ABCD is a square of side 10 cm. CEF is a triangle. The length of DF is $\frac{1}{4}$ of the length of FC. Find the difference in the 2 shaded areas.

Ans: _____ [4]

21
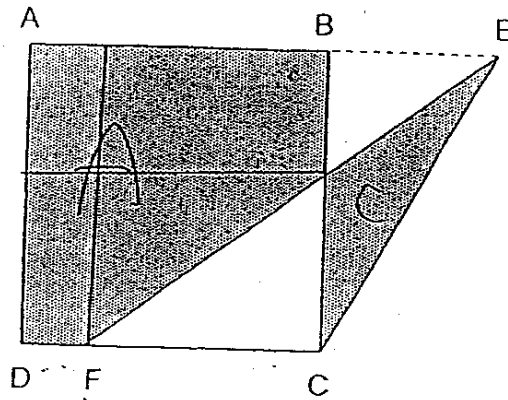
45   A florist sold 80 stalks of roses and threw away $\frac{1}{7}$ of the remaining stalks

of roses which had wilted. $\frac{2}{5}$ of his roses were left. How many stalks of

roses had he left?

Ans: _____ [5]

46   There were some marbles in Boxes A, B and C. Box A contained 60% of the total number of marbles in Boxes B and C. Box B contained 25% of the total number of marbles in Boxes A and C. There were 4 more marbles in Box C than in Box A. Find the total number of marbles in all the boxes.

Ans: _____ [5]

47   Sam and Colin drove from City A to City B. Sam reached City B in 16 hours. Colin left 6 hours later than Sam and reached City B at the same time as Sam. The difference between their average speeds was 30 km/h.

(a)   Find the distance Sam had travelled when Colin left City A.

(b)   Find the distance between the 2 cities.

Ans: (a) _____ [3]

(b) ____ _____ [2]

24

(48) Mr Lee spent $5190 on some watches and clocks. The amount spent on the watches was $2310 more than the amount spent on the clocks. He bought $\frac{4}{5}$ times as many clocks as watches. Each clock cost $13 less than each watch. What was the total number of watches and clocks bought by Mr Lee?

Ans: _____ [5]

END OF PAPER

Setters: Mrs Lily Lee, Mrs Lilian Sng

Nanyang Primary School
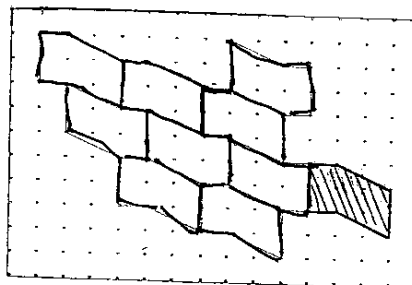## <u>Primary 6 Maths SA1 Exams (2006)</u>

Answer Sheets

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

16. 3.43m
17. $44.00
18. 3hr 50 mins
19. 12.10am

20. B.

21. 5 : 6 : 2
22. 15 minutes
23. 314cm
24

25. February

26.	320%	27.	(30 + 5d)
28.	5m pears	29.	6 o'clock
30.	$\dfrac{5}{12}$	31.	$102.00
32.	Azizah = 90% Caili = 100% Bala = 100% Bala = 90% Azizah = $(100 \div 90) \times 100\% = 111\frac{1}{9}\%$ $= (111\frac{1}{9} - 90)\% = 21\frac{1}{9}\%$	33.	6cm

34.	**Female in auditorium** $= \dfrac{5}{8}$ $\dfrac{3}{4} = \dfrac{9}{12}$ $12 - 8 = 4$ $9 - 4 = 5$ $\quad\quad = \underline{9 : 5}$ (Ans)	**35.**	$\pi \times 8\text{cm} \times \dfrac{1}{2} = 4\pi \text{ cm}$ $\pi \times 4\text{xm} \times \dfrac{1}{2} = 2\pi \text{ cm}$ $8\text{cm} - 4\text{cm} = 4\text{cm}$ $4\pi \text{ cm} + 2\pi \text{ cm} = 6\pi \text{ cm}$ $\quad\quad\quad = \underline{(6\pi + 4)\text{cm}}$ (Ans)
36.	$5 \times 2 = 10$ $10 + 2 = 12$ $2 + 1 + 3$ $3\text{u} = \$3.00$ $12\text{u} = \$3.00 \times 4$ $\quad\quad = \$12.00$	**37.**	$25 \div 5 = 25\text{cm}$ $40 \div 8 = 8$ $\text{Vol.} = 8 \times 5 \times 5$ $\quad\quad = 40 \times 5$ $\quad\quad = 2000\text{cm}^3$
38.	$60 - \underline{25} = 35$ $25 \times 3 = 75$ **Checked** $75 + 35 = 110$ $\underline{25}$ **is the answer.**	**39.**	$180° - 68° = 112°$ $\angle\text{y} = 180° - 130° = 50°$ $\angle\text{z} = 180° - 50° - 55° = \underline{75°}$ (Ans)
40.	$(222 - 4) \div 2$ $= 220 \div 2$ $= 110$ $= 110 + 1$ $= \underline{111}$ (Ans)	**41.**	$\pi \times 10\text{cm} \times 10\text{cm} \times \dfrac{1}{2} = 50\pi \text{ cm}^2$ **The area is** $\underline{50\pi \text{ cm}^2}$ (Ans)
42.	$75 \times 5\cent \; 375\cent$ $375\cent - 15\cent = 360\cent$ $360\cent \div 12 = 30\cent$ $30\cent + 5\cent = 35\cent$ $35\cent \times 75 = \underline{\$26.25\cent}$ (Ans)		

| 43. | school ⊢————————————————⊣ park | 44. | $10 \times 10 = 100cm^2$ |

43.

school ⊢————————————————⊣ park

←————————————————→

$55 \text{ min} = \dfrac{55}{60} = \dfrac{11}{12} \text{ hr}$

$55\text{min} - 5\text{min} = 50\text{minutes}$

$= \dfrac{50}{60}$

$= \dfrac{5}{6}$

$12\text{km/hr} \times \dfrac{11}{12} = 11\text{km}$

$11\text{km} \div \dfrac{5}{6} = 13\dfrac{1}{5} \text{ km/hr}$

Jacob's speed is $13\dfrac{1}{5}$ km/hr (Ans)

44.

$10 \times 10 = 100cm^2$

$1 + 4 = 5$

$\dfrac{10}{5} \times 4 = 8cm$

$\dfrac{1}{2} \times 8cm \times 10cm = 40cm^2$

$100cm^2 - 40cm^2 = 60cm^2$

The difference is 60cm²   (Ans)

45.

$\dfrac{7}{7} - \dfrac{6}{7} = \dfrac{1}{7}$

$\dfrac{6}{7} = \dfrac{6}{7}$ 　　　　$\dfrac{2}{5} = \dfrac{6}{15}$

　　　　　　　$\dfrac{6}{15} + \dfrac{1}{15} = \dfrac{7}{15}$

$15 - 7 = 8$ 　　　$15 - 7 = 8$

$\dfrac{80}{8} \times 6 = 60$

He had 60 stalks of roses left. (Ans)

46.

$60\% = \dfrac{60}{100} = \dfrac{3}{5}$

$25\% = \dfrac{25}{100} = \dfrac{1}{4}$

A : BC

3 : 5 = 8

15 : 25

B : AC

1 : 4 = 5

8 : 32 = 40

A = 15　　B = 8　　　　C : 32 − 15 = 17

15 + 8 + 17 = 40

$\dfrac{4}{2} \times 40 = 80$

The total number is 80 marbles. (Ans)

6h	**Sam**	
10h	**180km**	
A → B		
	10h	**Colin**
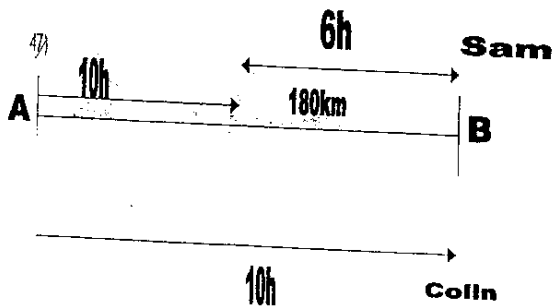
47a.

Speed	=	S	:	C
		10	:	16

Time	=	S	:	C
		16	:	10

16hr – 6hr = 10hr
16hr – 10hr = 6hr
(30 ÷ 6) x 10 = 50km/hr
50km/hr x 6hr = 300km

The distance is <u>300km</u> (Ans)

47b.

(30 ÷ 6) x 16 = 80km/hr
80km/hr x 10hr = 800km

The distance is <u>800km</u> (Ans)

2310=1 W and ?$13

48.

Take away the $13 and the extra 1 unit
What is left is all clocks
$(5190 – 2310) = $2880.00
$2880 ÷ 8 = $360.00
$360 x 4 = $1440.00
$(1440 + 2310) = $3750.00
$3750.00 ÷ 5 = $750.00
$750.00 x 4 = $3000.00
$3000.00 – $1440.00 = $1560.00
$1460.00 ÷ 13 = 120
120 ÷ 4 = 30
30 x 5 = 150   30 x 4 = 120
150 + 120 = 270

The total number of watches and cocks
are <u>270</u> (Ans)