METHODIST GIRLS' SCHOOL (Primary)
Preliminary Examination (2008)
Primary 6

MATHEMATICS
(BOOKLET A)

Name: _____ ( )

Class: P 6. _____

Booklet A (20)	

Total time for Booklets A and B: 2h 15 min

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

This booklet consists of 5 printed pages.

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 $\frac{2}{5} \times \frac{1}{3} \div 3$

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

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

(3) $\frac{2}{5}$

(4) $\frac{2}{45}$

2.   Mary spent $\frac{1}{6}$ of her money on a story book and $\frac{3}{10}$ of the remainder on a
blouse. If she had \$21 left, how much did the story book cost?

(1)   \$3
(2)   \$6
(3)   \$9
(4)   \$12

3   Tim has \$m. Alan has \$9 less than Tim.
What is the average amount of money each boy has?

(1) $\$ \frac{m-9}{2}$

(2) $\$ \frac{9-m}{2}$
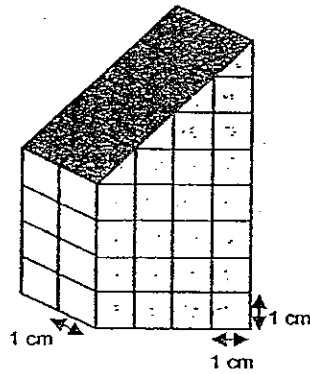
(3) $\$ \frac{2m-9}{2}$

(4) $\$ (m-9)$

4.   James ran 10 km, cycled 54 km and swam 1 500 m last week. What was the
total distance covered?

(1)   1 564 m
(2)   2 140 m
(3)   7 900 m
(4)   65 500 m

5. Rasidah used 15 cm of ribbon to make a bow. She made 30 bows altogether. How much ribbon did she use?
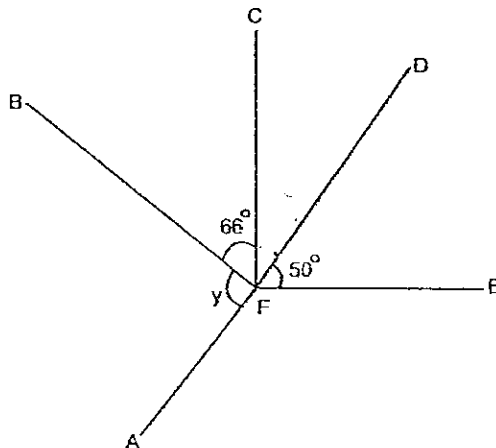
    (1)   4.5 cm
    (2)   45 cm
    (3)   4.5 m
    (4)   45 m

6. What is the volume of the solid below?

    (1)   16 cm^3
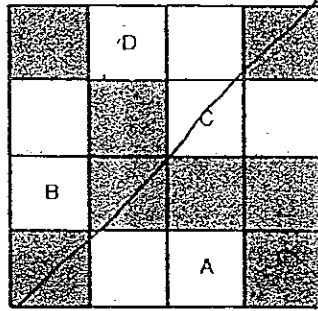   (2)   32 cm^3
    (3)   48 cm^3
    (4)   52 cm^3

7. In the figure, AFD is a straight line and ∠CFE is a right angle. Find ∠ y.

    (1)   50 °
    (2)   64 °
    (3)   74 °
    (4)   90 °
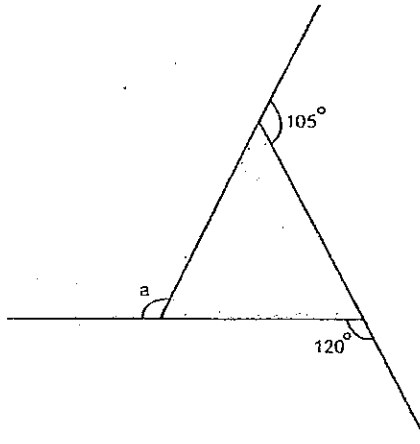
8. Which square must be shaded so that the figure has a line of symmetry?

(1) A
(2) B
(3) C
(4) D

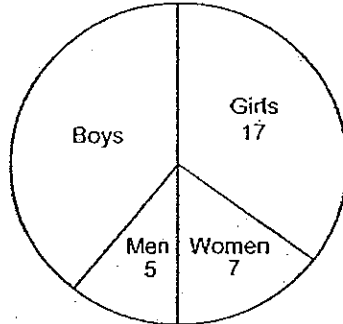9. The figure is formed by 3 straight lines. What is the value of ∠a?

(1) 60 °
(2) 75 °
(3) 135 °
(4) 225 °

10. The pie chart represents the number of people in a hall. Half of them are girls and women. How many **more** boys than men are there in the hall?


(1) 14
(2) 19
(3) 24
(4) 48

11. Buns were sold at 3 for $2. Mrs Lee wants to buy 40 buns for her pupils. How much did she spend?

(1) $13
(2) $20
(3) $26
(4) $28

12. A rectangular piece of paper (Diagram A) is folded along a diagonal as shown below. The area of the resulting figure, as shown in Diagram B, is $\frac{5}{8}$ of the area of the original piece of paper. If the shaded area is 24 cm^2, find the area of the original rectangular piece of paper.

Diagram A   Diagram B
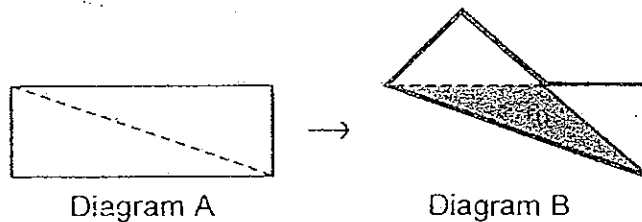
(1) 9 cm^2
(2) 15 cm^2
(3) 48 cm^2
(4) 64 cm^2

13. The pie chart shows how Mrs Chen spent her money on her holiday. The amount spent on food was the same as the amount spent on transport. If the amount Mrs Chen spent on sightseeing is $\frac{1}{3}$ the amount she spent on food, how much did she spend on accommodation?
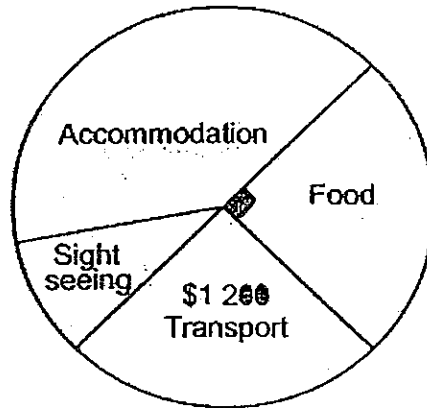
   (1) $ 400
   (2) $1600
   (3) $2000
   (4) $2400

14. Jane's average savings for the first 5 months of the year was $76. If she had saved $90 in May, her average savings would have been $80. How much did she actually save in May?

   (1) $20
   (2) $70
   (3) $86
   (4) $94

15. Marie gave 20% of her salary to her mother. Her mother spent 45% of the sum she was given. What percentage of Marie's salary had her mother left?

   (1)   9%
   (2)   11%
   (3)   44%
   (4)   55%

METHODIST GIRLS' SCHOOL (Primary)
Preliminary Examination (2008)
Primary 6

Mathematics
(BOOKLET B1)

Name:_____ (   )

Class: P 6. _____

Booklet B1 (30)	

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

Follow all instructions carefully.

Answer all questions.

This booklet consists of 6 printed pages.

Section B1

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.

30 marks

16. The sum of three whole numbers is 10.
The product of the same three numbers is 30.
What are the numbers?

Ans:_____

17. $0.153 = 0.103 +$ _____
What is the missing number?

Ans:_____

18. Find the sum of the common factors of 18 and 24.

Ans:_____

19. There is 600 m^3 of water in a rectangular swimming pool.
The height of the water level is 2 m.
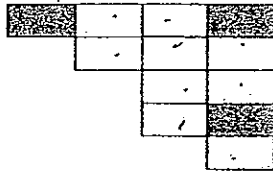If the length of the pool is 20m, what is its breadth?

Ans:_____m

66

20. Mr Lim went to the bank to exchange 100 5-cent coins, 200 20-cent coins and 150 50-cents for $10 notes. How many notes did he get?
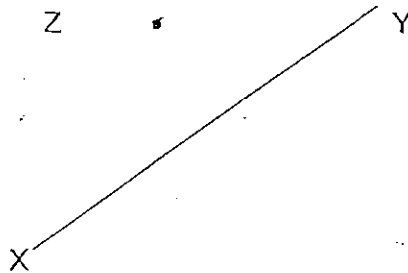
Ans:_____

21. How many **more** rectangles must be shaded, so that the area of the shaded portion is $\frac{2}{3}$ of the whole figure?

Ans:_____

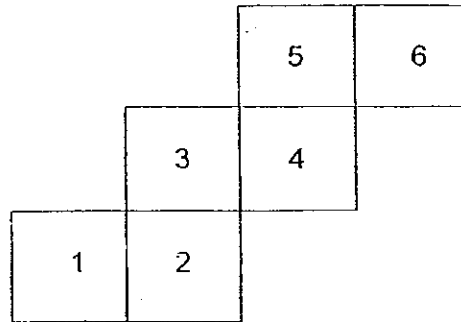22. The figure below shows a line XY and a point Z. Draw a line parallel to XY passing through point Z.

Z   Y

X

23. Express $\frac{3}{8}$ as a percentage.

Ans:_____%

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

		5	6
	3	4	
1	2		

The cube is placed on the table with the number 2 on the top face.
Which number is on the bottom face of the cube?

Ans:_____

25. There are 20% more boys than girls in a choir. If there are 8 more boys than girls, how many children are there altogether?

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 space provided. For questions which require units, give your answers in the units stated.

26. Find the value of $100.4 - 6.1 \times 5 + 10 \div 2$.

Ans:_____

(Go on to the next page)

68.

27. Mark numbered all his books and packed them into 5 boxes of different colours. He put the first book in the red box, the second book in the green box, the third book in the yellow box, the fourth book in the blue box and the fifth book in the purple box. He repeats the process until all the books have been placed in boxes. In which box will the 89th book be in?

Ans:_____

28. I am a 4-digit number. Read the clues below to find out what number I am.

(1) There is a 2 in the thousands place.
(2) The digit in the tens place is 4 times the digit in the thousands place.
(3) The digit in the ones place is half of the number in the tens place.
(4) The digit in the hundreds place is 5 less than the number in the tens place.

Ans:_____

29. The breadth of a rectangle is three-quarters its length. If the area of the rectangle is 48 cm², what is the smallest perimeter that the rectangle can have, assuming that its length and breadth is a whole number?
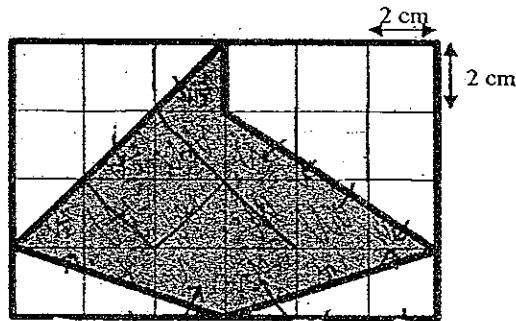
Ans:_____cm

30. The figure below, not drawn to scale, shows a square drawn in a circle of diameter 40 cm. What is the area of the **unshaded** region?
   (Take $\pi = 3.14$)
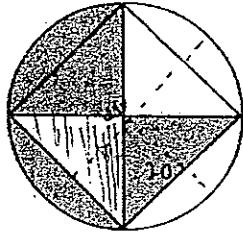
Ans:_____cm^2

31. What is the area of the shaded region?

Ans:_____cm^2

32. The area of a square classroom is 36 m^2.
   How many 50-cm square tiles are needed to tile the floor of the classroom?

Ans:_____

70.

MATHEMATICS
(BOOKLET B2)

Name: _____ (   )

Class: P 6. _____

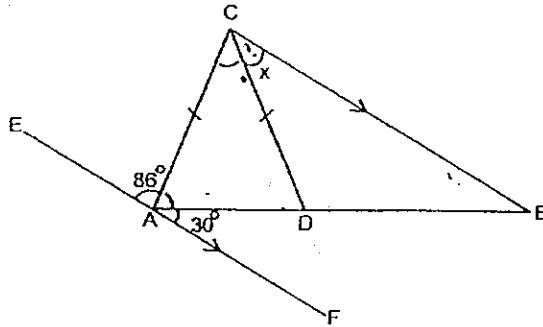|	
Booklet A (20)	
Booklet B1 (30)	
Booklet B2 (50)	
Total: (100)	

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

Follow all instructions carefully.

Answer all questions.

This booklet consists of 10 printed pages.

33. The figure below is not drawn to scale.
ABC is a triangle and CA = CD.
EAF is a straight line and it is parallel to CB. Find $\angle x$.

C
x
E
86°
A 30° D
B
F

Ans:_____

34. The table shows the rate of charges for parking at a car park.

1st hour	$1.50
Subsequent per half hour or part thereof	$1.00
After 5 p.m.	$2 per entry

Mr Kim parked his car from 1.15 p.m. to 7 p.m. How much did he pay?

Ans: $_____

35. Raju earns a fixed monthly salary. Last month he saved 20% of it.
This month he saves 20% less than what he saved last month.
The difference in savings between the two months is $200. What is his monthly salary?

Ans: $_____

7z.

For questions **36** to **48**, show your working clearly in the space provided for each question and write your answers in the space provided.
The number of marks available is shown in brackets [ ] at the end of each question or part-question.

50 marks

36.   The figure is made up of two squares.
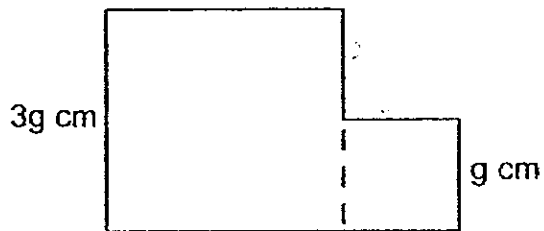
(a)   Express the perimeter of the figure in terms of g cm in the simplest form.

(b)   If $g = 3$, find the area of the figure.

Ans: (a) _____[1]

(b) _____[2]

37. Use the information in the table below to answer the questions.

The table below shows the results of a survey on 200 married couples.

How often do you go the movies?

Name of group	Size of group	Answer given
A	A small number	"Very often"
B	13%	"Often"
C	25%	"Sometimes"
D	More than half	"Hardly ever"

A pie chart is drawn to represent the results of the survey.

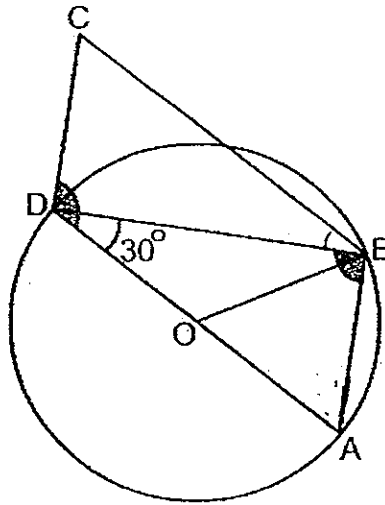(a) Write the letter B in the correct part of the pie chart shown. [1]
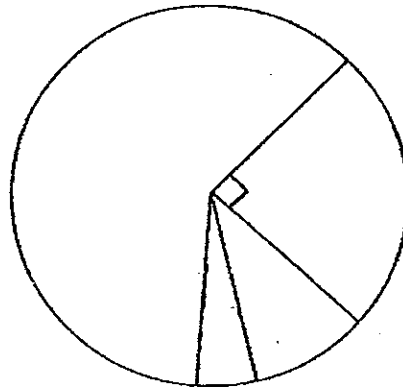
(b) How many **adults** gave the answer as "Sometimes"?

Ans: (b) _____[2]

7¼.

38. In the figure, ABCD is a parallelogram. O is the centre of the circle.
Find

(a) ∠ABD

(b) ∠ADC

Ans: (a) _____ [2]

(b) _____ [1]

39. Mrs Hanson typed a 20-page report. For the first 8 pages, she typed at a rate
of 50 words per minute. For the remaining pages, she slowed down to a rate
of 30 words per minute. On average, the first 8 pages had 500 words each
and the rest of the pages had 200 words each. How long did Mrs Hanson
take to type the entire report? Give your answer in hours and minutes.

Ans: _ _____ [3]

40. 390 marbles were placed into 3 boxes according to their colours.
The number of blue marbles is twice the number of the red marbles, and the number of green marbles is less than the number of blue marbles. The number of marbles in each box is less than 200.
The number of marbles in each box is divisible by both 6 and 5.
- How many green marbles were there?

Ans: _____[3]

41. The figure below is made up of a semi-circle of diameter 28 cm and a triangle ABC. O is the centre of the semi-circle. Find the area of the shaded part.
(Take $\pi = \dfrac{22}{7}$)
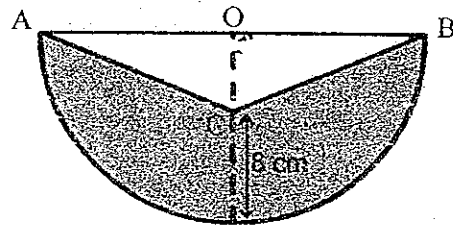
Ans: _____[3]

(Go on to the next page)

76.

42. At a practice, a netball player threw the ball at the net 100 times. For the first 70 throws, the ball went into the net 2 times out of every 5 throws. For the remaining throws, she managed to score 80% of the throws. How many times did the ball miss the net?

Ans:_____ [4]

43. In the figure (not drawn to scale), ABCD is a rhombus, ∠ADB = 69° and ∠BEC = 127°.

    (a)   Find ∠a.

    (b)   Find ∠b.
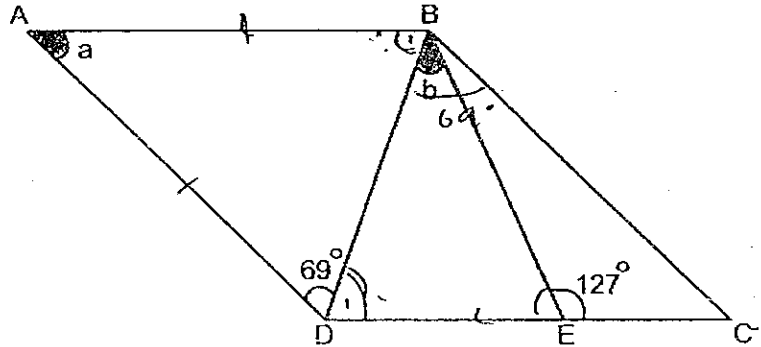
Ans: (a)_____[2]

(b)_____[2]

(Go on to the next page)

44. $\frac{1}{5}$ of Mark's coins is $\frac{1}{4}$ of Siti's coins. All of Mark's coins are 50-cent coins, while Siti has a combination of 50-cent and 20-cent coins. Mark has 16 more coins than Siti. If Siti gives half of her 20-cent coins to Mark, Mark will have $42.40. How much money did Siti have at first?

Ans:_____ [4]

18

45. At 7.30 a.m. a bus left Town S for Town R travelling at an average speed of 60km/h.
     15 minutes later, a car left Town R for Town S. The car reached Town S at 10.45 a.m. The bus reached Town R at 12 noon.

  (a) How far apart were the two towns?
  (b) What was the average speed of the car?
  (c) How far apart were the two vehicles at 9.45 a.m.?

Ans: (a)_____[1]

(b)_____[1]

(c)_____[3]

(Go on to the next page)

46. Xiaoling, Yoka and Zana each had some money. The ratio of the amount of money Xiaoling had to the amount of money Yoka had was 7: 3 at first. Xiaoling lent $43 to Zana and Yoka borrowed $185 from Zana. In the end, Xiaoling had the same amount of money as Yoka.

(a) How much did Yoka have at first?
(b) How much did Xiaoling and Yoka each have in the end?

Ans: (a)_____[3]

(b)_____[2]

47. Tap A flows at a rate of 2 100 ml/min while Tap B flows at a rate of 2 500 ml/min. Both taps were turned on at the same time to fill a tank with dimensions 50 cm by 40 cm by 30 cm. After 5 minutes, the plug at the bottom of the tank is removed, with the two taps still running. If the water is drained at a rate of 600 ml/min, what is the water level 2 minutes after the plug is removed?

Ans:_____[5]

48. Mrs Raj spent $\frac{2}{5}$ of her money on 3 blouses. She bought another 2 similar blouses and 13 handkerchiefs with the rest of her money.

    (a)   What fraction of Mrs Raj's money was spent on buying the 13 handkerchiefs? Give your answer in its simplest form.

    (b)   If Mrs Raj was given 1 handkerchief free for every 6 handkerchiefs bought, how many handkerchiefs would she have got altogether if she had spent all her money on handkerchiefs?

Ans: (a)_____[1]

(b)_____[4]

END OF PAPER

ANSWER SHEET

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

16)2,5,3   17)0.05   18)12   19)15m   20)12

21)5   22) Z   Y   23)37.5%   24)5

25)88   26)74.9   27)Blue   28)2384   29)28cm

30)628cm₂   31)42cm₂   32)144   33)34   34)$9.50

35)$5000

36)a)3g-g=2g
    $(3g+3g+3g+2g+g+g+g)cm=149cm$
    The perimeter of the figure in terms of g cm in the simplest
from is 149cm.
    b)3x3=9cm
      9cmx9cm=81cm₂
      3x3=9cm₂
      81cm₂+9cm₂=90cm₂
    The area of the figure is 90cm₂

37)a)
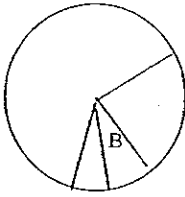
b)$100\% \rightarrow 200$

$\qquad 25\% \rightarrow \dfrac{25 \times 200}{100}$

$\qquad\qquad = 50$

$\qquad 50 \times 2 = 100$

100 adults gave the answer as "sometimes"

38)a)$180° -30° =150°$

$\qquad \angle ABD=180° -30° -60° =90°$

$\qquad \angle ABD$ is $90°$

b)$\angle ADC=90° +30° =120°$

$\qquad \angle ADC$ is $120°$

39)$500 \div 50 = 10$

$\qquad 10 \times 8 = 80$

$\qquad 200 \div 30 = 6\,2/3$

$\qquad 20 - 8 = 12$

$\qquad 12 \times 6\,2/3 = 80$

$\qquad 80 \times 2 = 160$

$\qquad 160 \div 60 = 2R40$

She took 2hrs 40min.

40)$6 \times 5 = 30$

$\qquad 390 \div 30 = 13$

Guess: $6 \times 30 = 180$ (blue)

$\qquad\quad 3 \times 30 = 90$ (red)

$\qquad\quad 4 \times 30 = 120$ (green)

There were 120 green marbles

41)$28 \div 2 = 14$

$\qquad \dfrac{1}{2} \times \dfrac{22}{7} \times 14 \times 14 = 308$

$\qquad \dfrac{1}{2} \times 6 \times 28 = 84$

$\qquad 308 - 84 = 224$

The area is $224 cm_2$

84.

42) 5-2=3
70÷5=14
14x3=42
100-70=30
100-80=20
20 x30=6
100
42+6=48
The ball missed the net 48 times.

43)a)∠a=180° -69° -69° =42°
∠a is 42°
b)∠BED=180° -127° =53°
∠b=180° -69° -53° =58°
∠b is 58°

44)16x5=80
80x0.5=40
42.40-40=2.40
2.40 ÷ 0.2=12
12x2=24
24x0.2=4.80
16x4=64
64x0.5=20
4.80+20=24.80
She had $24.80

45)a)7.30am to 12 noon →4½hrs
60x4½=240+30=270
The two towns were 270km apart.
b)7.45 to 10.45 →3hrs
270÷3=90
The average speed is 90km/h
c)7.30am to 9.45am →2hrs 15min
60x2¼=120+15=135
7.45am to 9.45am →2hrs
40x2=80
180-135=45
They were 45km apart.

46)a)7-3=4
43+185=228
228÷4=57
57x3=171
Yoka had $171 at first.

b)$171 + $185=$356
Xiaoling and Yoka each have $356 in the end.

47)1 min→2100ml +2500ml=46ooml
5 min→4600ml x5=23000ml
4600ml – 600ml=4000ml
4000mlx2=8000ml
23000ml + 8000ml=31000ml
31000ml = 15.5
50x40
The water level is 15.5cm after the plug is removed.

48)a) $\frac{2}{5}$ = $\frac{6}{15}$
6÷3=2
1 blouse→2 units.
$\frac{5}{15}$ = $\frac{1}{3}$

$\frac{1}{3}$ of Mrs Raj's money was spent on buying the 13 handkerchiefs.

b)5 units→13 handkerchiefs.
15 units→$\frac{15}{5}$ x13 handkerchiefs
=39 handkerchiefs
39÷6=6r3
6x6=36
36+6=42
42+3=45
She would have gotten 45 handkerchiefs altogether if she had spent all her money on handkerchiefs.