METHODIST GIRLS' SCHOOL

Founded in 1887

PRIMARY 6 PRELIMINARY EXAMINATION 2010
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 2010

This booklet consists of 5 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)

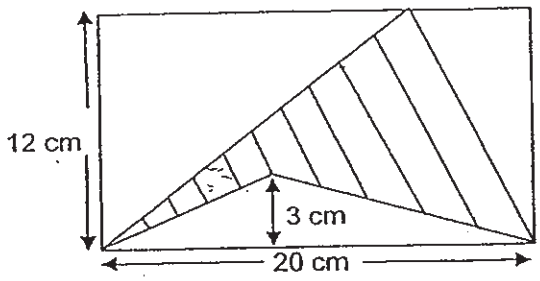
1. Round off 687 494 to the nearest ten thousands.

(1) 687 000
(2) 688 000
(3) 690 000
(4) 700 000

2. A show started at 10.35 a.m. and ended at 1.10 pm.
How long was the show in hours and minutes?

(1) 2 h 25 min
(2) 2 h 35 min
(3) 3 h 15 min
(4) 3 h 25 min

3.



Find the area of the shaded part of the figure above.

(1) 30 cm^2
(2) 90 cm^2
(3) 120 cm^2
(4) 240 cm^2

4. The area of a square is 100 cm^2. What is its perimeter?

(1) 10 cm
(2) 25 cm
(3) 40 cm
(4) 100 cm

(Go on to the next page)

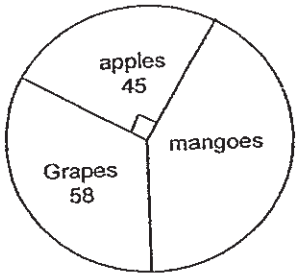
5. The table below shows the favourite Spa of residents from 3 towns.

	Number of Residents			
Name	Spa A	Spa B	Spa C	Spa D
Town A	12	15	8	20
Town B	15	11	13	16
Town C	9	12	10	14

How many more residents prefer Spa D to Spa B?

(1) 12
(2) 38
(3) 50
(4) 88

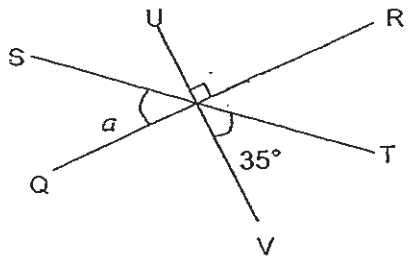
6. The pie chart shows the favourite fruit chosen by a group of children.
How many children chose mango as their favourite fruit?



(1) 13
(2) 77
(3) 103
(4) 180

7. The figure below is not drawn to scale. QR, ST and UV are straight lines. Find $\angle a$.

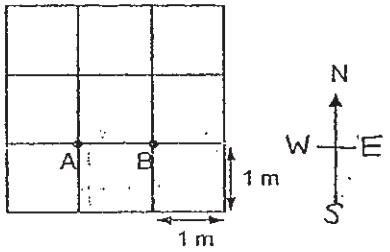
(1) 35°
(2) 45°
(3) 55°
(4) 65°



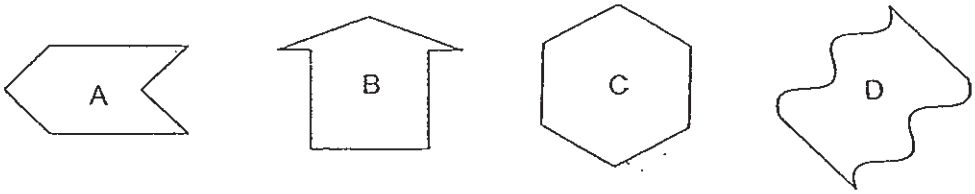
(Go on to the next page)

8. In the diagram, Michael was standing at Point A and facing north.
He then made a 180°- turn. Walking for 1 metre in the new direction that he is facing now, in which direction is he from Point B?

(1) south-east
(2) north-west
(3) south-west
(4) north-east



9 Which of the following shapes can tessellate?



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

10. Simplify the algebraic expression.

$$5x + 10 - 3x - 8 + 7x$$

(1) $9x + 2$
(2) $9x + 18$
(3) $15x + 2$
(4) $15x + 18$

11. Susan has 3 cards. Each card is printed with a different whole number. The largest number is 29. When these numbers are added 2 at a time, the sums are 38, 40 and 56 respectively.
What is the smallest number?

(1) 9
(2) 11
(3) 18
(4) 27

(Go on to the next page)

12. What is the greatest number of cuboids 5 cm by 3 cm by 3 cm that can fit into a carton 40 cm by 30 cm by 20 cm?

(1) 468
(2) 480
(3) 520
(4) 533

13. The ratio of the length of a rectangle to its breadth is 5 : 1.
Given that the area of the rectangle is 125 cm^2, find its perimeter.

(1) 5 cm
(2) 25 cm
(3) 30 cm
(4) 60 cm

14. The table shows the rates charged at a car park.

First 30 minutes	$1.60
Every additional ½ hour or less	80 ¢

How much must Ali pay for parking his car from 10.45 a.m. to 2.55 p.m. on the same day?

(1) $ 4.00
(2) $ 4.80
(3) $ 7.20
(4) $ 8.00

15. If W : X = 1 : 2, X : Y = 3 : 7 and Y : Z = 2 : 3, what is W : X : Y : Z?

(1) 1 : 2 : 3 : 7
(2) 1 : 3 : 7 : 2
(3) 3 : 6 : 7 : 21
(4) 3 : 6 : 14 : 21

(Go on to Booklet B)

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PRIMARY 6 PRELIMINARY EXAMINATION 2010
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 2010

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

This booklet consists of 6 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. A group of 7 girls shared a box of pens. After they had taken 6 pens each, there were 3 pens left. How many pens were there at first?

Ans: _____

17. Ann has $\frac{9}{10}$ m of ribbon. She gives Sandra $\frac{2}{5}$ of her ribbon.
Find the length of Sandra's ribbon.

Ans: _____ cm

18. $6 \times 7 + 4 \times 7 = \square \times 7 - 14$

What is the missing number in the box?

Ans: _____

19. Raja bought 5 CDs at $19.99 each. How much did Raja have to pay in all? Round off your answer to the nearest ten cents.

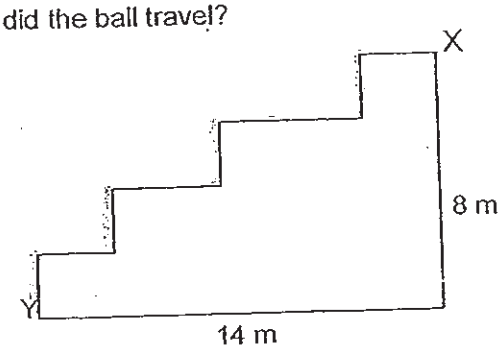
Ans: $ _____

20 Express 10 090 m in kilometres.

Ans: _____ km

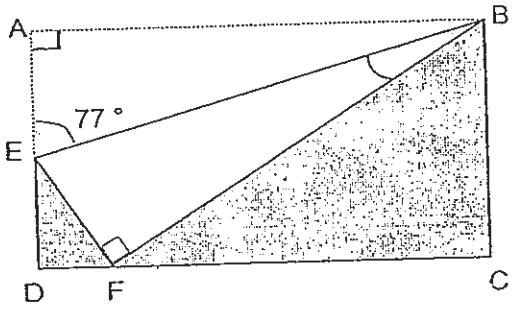
(Go on to the next page)

21. A ball rolls down a flight of stairs from point X to point Y, as shown below. How far did the ball travel?



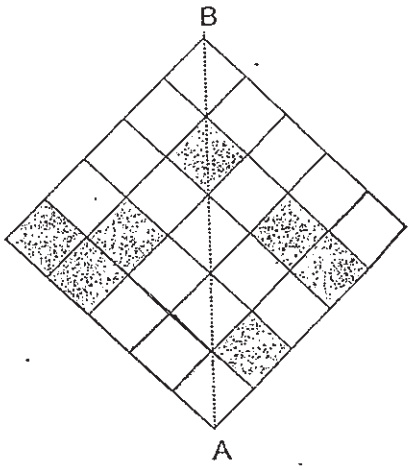
Ans: _____ m

22 The figure below, not drawn to scale, shows a rectangle ABCD being folded along BE. Given that $\angle AEB = 77°$, find $\angle EBF$.



Ans: _____ °

23 Shade in the diagram the least number of small squares such that line AB is the line of symmetry.



(Go on to the next page)

24. $\frac{3}{8}$ = _____%

Ans: _____%

25. Meena made 8 birthday cards. She made 12 more greeting cards than birthday cards. What is the ratio of the number of greeting cards to the total number of cards?

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 each question which requires units, give your answer in the units stated.

(10 marks)

26. At an exhibition, the number of women is $\frac{2}{5}$ the number of men.

After 48 men left, the number of men is $1\frac{1}{2}$ times the number of women.

How many women are there?

Ans: _____

27. Jason is 12 years younger than his sister. In 2 years' time, his sister will be three times as old as him. How old is his sister now?

Ans: _____

28. Sally takes 15 minutes to cycle from her home to the library. The distance travelled is 850 m. Find Sally's speed.

Ans: _____ km/h

(Go on to the next page)

29. A cube has a volume of 1 000 cm^3. Find the area of 3 of its faces.

Ans: _____ cm^2

30 Man Ling spent 30% of her pocket money on a story book and 40% of the remainder on a magazine. What percentage of her money is left?

Ans: _____ %

End of Paper

METHODIST GIRLS' SCHOOL

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PRIMARY 6 PRELIMINARY EXAMINATION 2010
MATHEMATICS

PAPER 2

Duration: 1h 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 2010

60

This booklet consists of 13 printed pages including this page.

Questions **1** to **5** carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

(10 marks)

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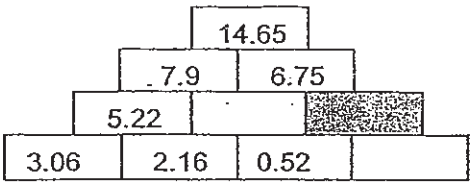
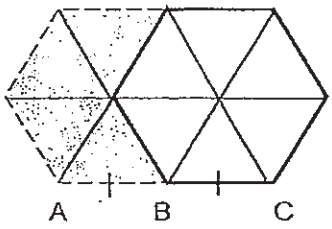
1. Study the pattern carefully. What number should be written in the **shaded** block?



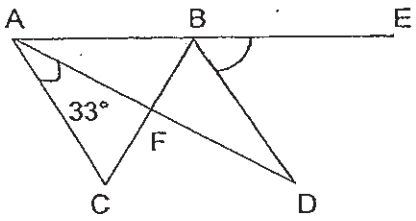
Ans: _____

2. The figure below shows 2 identical regular hexagons overlapping each other. Each hexagon has an area of 216 cm^2 each. Given that AB = BC, find the area of the shaded part.



Ans: _____ cm^2

3. In the figure, not drawn to scale, ABC is an equilateral triangle, ABD is an isosceles triangle, and ABE is a straight line. Find ∠ DBE.



Ans: _____ °

(Go on to the next page)

4. The average of 3 numbers is 45. The first number is $\frac{2}{3}$ of the second number and it is 26 more than the third number. Find the second number.

Ans: _____

5. At a clearance sale, Ken purchased a model plane at $192.60, inclusive of 7% GST. How much GST did Ken pay?

Ans: $_____

(Go on to the next page)

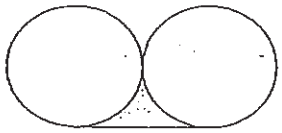
For Questions 6 to 18, show your working clearly in the space below each question and write your answer in the spaces provided. The number of marks available is shown in the brackets [ ] at the end of each question or part-question.

(50 marks)

6 On the reverse side of a card is a number.
The decimal point of this number is shifted to the right twice.
The difference between the new number and the initial number is 544.5.
What is the number written on this card?

Ans: _____ [3]

7.

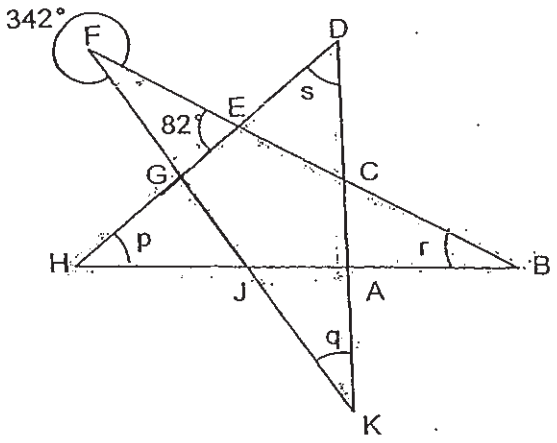


The figure is made of 2 identical circles of diameter 14 cm.
Find the area of the shaded part.
(Take $\pi = 3.14$)

Ans: _____ [3]

(Go on to the next page)

8. In the figure below, not drawn to scale, BF, BH, DH, DK and FK are straight lines. Find the value of $\angle p + \angle q + \angle r + \angle s$.



Ans: _____[3]

9. A factory pays its workers \$6.25 per hour from 8 a.m. to 6 p.m. and \$7.15 per hour after 6 p.m. How much can Mr Wong earn in 4 weeks if he works 6 days a week from 11 a.m. to 8 p.m.?

Ans: _____[3]

(Go on to the next page)

10. The table below shows the parking charges at a shopping centre.

Duration	Charges ($)
First hour	$2a$
Subsequent half hour or part thereof	a
After 6 p.m.	$5a$ (per entry)

How much would a shopper have to pay for parking her car at the car park from 2.40 p.m. to 7.30 p.m.?

Ans: _____ [3]

11. Ellen and Lenny have some sweets.

If Ellen gives away 12 sweets, the number of sweets Ellen has is $\frac{13}{24}$ of the total number of sweets that both of them have.

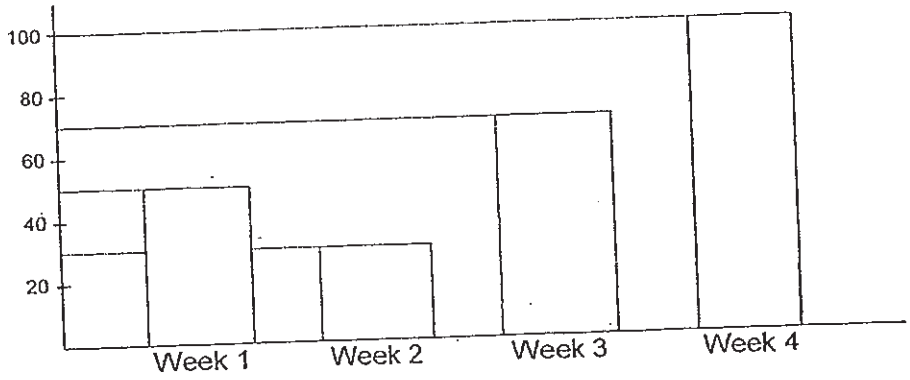
If Lenny gives away 12 sweets, the number of sweets Lenny has is $\frac{3}{8}$ of the total number of sweets that both of them have.

How many sweets do they have altogether?

Ans: _____ [4]

(Go on to the next page)

12. The bar graph shows the number of customers who dined in a fast food restaurant in the month of June. Study the graph carefully.



(a) What percentage of customers dined in Week 4? ~~Give your answer as a mixed number.~~

(b) Find the percentage decrease in Week 2. ~~Give your answer as a mixed number.~~

(c) If the number of customers increased by ~~25%~~ 30% in the first week of July when compared to the whole month of June, how many more customers dined at the restaurant in the first week of July?

Ans: (a) _____ [1]

(b) _____ [2]

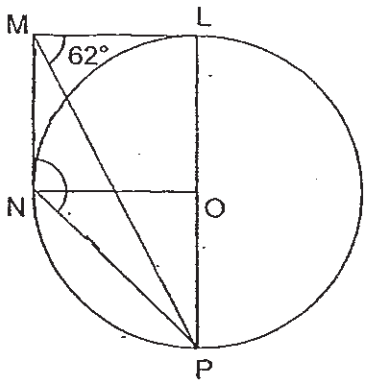
(c) _____ [1]

(Go on to the next page)

13. In the figure, not drawn to scale, LMNO is a square, O is the centre of the circle and LP is the diameter of the circle.

(a) Find $\angle MNP$.

(b) Find $\angle MPN$.



Ans: (a) _____ [2]

(b) _____ [2]

(Go on to the next page)

14. In a recent triathlon race, Ben swam, cycled and ran at an average speed of 21.5 km/h. He swam 1 500 m in 34 minutes and took 11 minutes more to run 10 km. He managed to complete the whole race in 2 hours 36 minutes.

(a) What was the distance that he travelled by cycling?

(b) Find the average speed for the total distance at which he cycled and ran. (Give your answer in km/h and as a fraction in the simplest form.)

Ans: (a) _____ [1]

(b) _____ [3]

(Go on to the next page)

15 Gerry had some green, red and blue beads. She had 25% more green beads than red beads, and 20% less blue beads than green and red beads.

(a) What is the ratio of red beads to green beads to blue bead?

(b) If there are 11 more blue beads than green beads, how many red and green beads are there?

Ans: (a) _____[2]

(b) _____[2]

(Go on to the next page)

16. Tina, Suzy and Rachel have 144 stamps altogether.

At first, Tina gave 12 stamps to Suzy.

Then, Suzy gave 8 stamps to Rachel. After that, Rachel gave 20 stamps to Tina.

The total number of stamps that Suzy and Rachel have now is half that of what Tina has. The number of stamps that Suzy has now is $\frac{3}{5}$ of the number of stamps that Rachel has.

How many stamps did Tina and Rachel have altogether at first?

Ans: _____ [5]

(Go on to the next page)

17. A tank contains some water up to a height of 10 cm.
When 4 identical marbles are put into the tank, the water level rises by 8 cm.
One marble is then removed from the tank and a metal block is put into the tank.
The water level increases to 22 cm.

(a) Find the ratio of the volume of 1 marble to the metal block.
(b) If the base area of the tank is 450 cm^2, how much **more** is the volume of the metal block than that of two marbles?

Ans: (a) _____ [2]

(b) _____ [3]

(Go on to the next page)

18. John and Sarah collected some cans for their class project.
John collected 25% more cans than Sarah. Then he gave 20 of his cans to Sarah and she had 20% more cans than him.

(a) How many cans did they have in all?

(b) How many more cans must John give to Sarah in order for Sarah to have 25% more than him?

Ans: (a) _____ [3]

(b) _____ [2]

End of Paper

Answer Ke

EXAM PAPER 2010

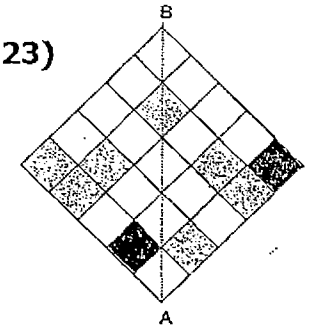
SCHOOL : MGS PRIMARY
SUBJECT : PRIMARY 6 MATHEMATICS

TERM : PERLIMINARY

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

13)45 pens **17)36cm** **18)12** **19)$100.00** **20)10.09km**

21)22m **22)13°** **23)** **24)37.5%**



25)5:7 **26)48 women**

27)16 years old **28)3.4 km/h**

29)300cm2 **30)42%**

Paper 2

1)7.9 – 5.22 = 2.68 **2.16 + 0.52 = 2.68** **6.75 – 2.68 = 4.07**	**2)216÷6 = 36** **36 x 4 = 144** **The area is 144cm2**
3)60° – 33° = 27° **180° – 27° – 27° = 126°** **180° – 126° =54°** **∠DBE = 54°**	**4)45 x 3 = 135** **135 + 26 = 161** **161÷ 7 = 23** **23 x 3 = 69** **The second number is 69**
5)100 + 7 = 107 **192.60÷ 107 = 1.80** **1.8 x 7 = 12.60** **He paid $12.60 GST**	**6)5.5**

7)14 x 14 = 196 14 ÷ 2 = 7 7 x 7 3.14 = 153.86 196 – 153.86 = 42.14 42.14 ÷ 2 = 21.07 The area is 21.07cm^2	8)360 – 342 = 18 180 – 18 – 82 = 80 180 – 82 = 98 180 – 98 = 82 180 – 80 = 100 180 – 100 = 80 80 + 82 = 162 $\angle p + \angle q + \angle r + \angle s = 162^\circ$
9)6.25 x 7 = 43.75 7.15 x 2 = 14.30 43.75 + 14.30 = 58.05→1 day 58.05 x 6 = 348.3→1 week 348.30 x 4 = 1393.20→4 wks He can earn $1393.20	10)2a + 5a + 5a = 12a A shopper would have to pay $12a
11)156 sweets	12)a)50 + 30 + 70 + 100 = 250 100/250 x 100/1 = 40 40% of customers dined in week 4. b)50 – 30 = 20 20/50 x 100/1 = 40 The percentage decrease is 40%. c)75 customers.
13)a)90 – 62 = 28 (180 – 90) ÷2 = 45 180 – 62 = 118 180 – 118 = 62 180 – 62 – 28 = 90 90 + 45 = 135 $\angle MNP = 135^\circ$ b)180 – 28 – 135 = 17 $\angle MPN = 17^\circ$	14)a)21.5 x $2_{36/60}$ = 55.9→total dis 55.9 – 1.5 – 10 = 44.4 The distance is 44.4 km. b)$2_{36/60}$ – 34/60 – 45/60 = $1_{17/60}$ (1h 17min)→cycle 44.4 + 10 = 54.4 54.4 ÷ $2_{1/30}$ = $26_{46/61}$ The average speed is $26_{46/61}$km/h
15)a)R : G : B 20 : 25 : 36 The ratio is 20: 25: 36 b)36 – 25 = 11 11÷11 = 1 20 + 25 = 45 45 x 1 = 45 There are 45 red and green beads.	16)8 x 3 = 24→total units 144÷24 = 6→1u 6x(8x2)=96→Tina Now 96 – 20 = 76 76 + 12 = 88→Tina at first 6 x 5 = 30→Rachel now 30 – 8 = 22 22 + 20 = 42→Rachel at first 42 + 88 = 130→T & R At first They have 130 stamp altogether at first.

17)a)8 ÷ 4 = 2
10 + 8 = 18
18 – 2 = 16
22 – 16 = 6
2 : 6
=1 : 3
The ratio is 1 : 3

b)450 x 10 = 4500
450 x 18 = 8100
8100 – 4500 = 360
(3600÷4) x 2 = 1800→2 marbles
450 x 16 = 7200
450 x 22 = 9900
9900 – 7200 = 2700→metal block
2700 – 1800 = 900
The volume is 900cm more

18)a)30 – 20 = 10
120 + 100 = 220
220÷ 10 = 22
5 + 4 = 9
22 x 9 = 198
They have 198 cans in all.

b)100 + 125 = 225
198 ÷ 225 = 0.88
0.88 x 100 = 88
(22 x 5) – 20 = 90
90 – 88 = 2
John must give Sarah 2 more cans.