Index No. | | | | | | – | |

SINGAPORE CHINESE GIRLS' SCHOOL

PRELIMINARY EXAMINATION 2010

PRIMARY 6

MATHEMATICS
PAPER 1

BOOKLET A

Name : _____( )

Class : Primary 6

24 August 2010

		Marks attained	Max Mark
Paper 1	Booklet A		20
	Booklet B		20
Paper 2			60
Total Marks			100

Parent's Signature

15 Questions
20 Marks

Total Time for Booklets A and B: 50 min

INSTRUCTIONS TO CANDIDATES
Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.
You are not allowed to use a calculator.

Booklet A

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

---

1. Simplify 8 + 5b – 3 – 2b.

   (1) 5 + 3b
   (2) 5 – 3b
   (3) 3b + 11
   (4) 3b - 11

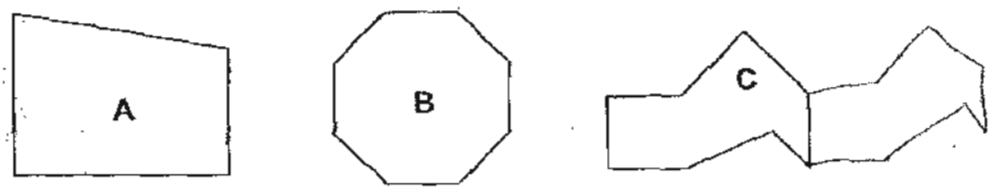
2. Express the value of $\frac{1}{10} + \frac{5}{100} + \frac{6}{1000}$ as a decimal, correct to the nearest hundredth.

   (1) 0.15
   (2) 0.16
   (3) 0.012
   (4) 0.156

3. Evaluate 24 + (47 – 5) ÷ 6 – 4.

   (1) 7
   (2) 27
   (3) 33
   (4) 45

4. Candice wants to lay her bedroom floor with tiles of only one shape. The tiles must fit together without any gaps or overlaps between them. Which of the following shapes can she choose from?



   (1) A only
   (2) A and B only
   (3) B and C only
   (4) A and C only

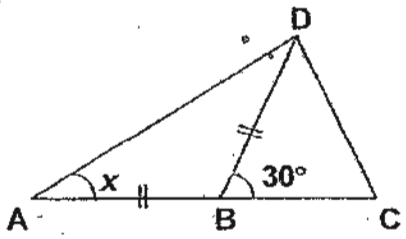
5. In the figure below, AB = BD. Find $\angle x$.

(1) 15°

(2) 30°

(3) 55°

(4) 75°



6. In the following expression, what is the value of A?

$34 \times 27 + 3 \times 27 = 9 \times 27 + A \times 27$

(1) 25

(2) 28

(3) 30

(4) 37

7. It takes 4 hours to fill $\frac{1}{2}$ a tank with water. Assuming that the water flows at the same rate, what is the total time taken to fill $\frac{7}{8}$ of the tank?

(1) 7 h

(2) 8 h

(3) 3 h

(4) 4 h

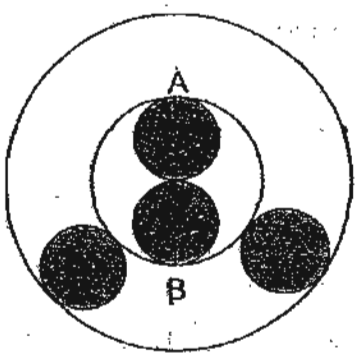
8. The figure below shows 4 shaded identical circles within 2 unshaded circles. AB is the diameter of the small unshaded circle. What fraction of the biggest circle is shaded?

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

(2) $\frac{1}{4}$

(3) $\frac{1}{8}$

(4) $\frac{1}{16}$



9. A box contained 180 apples. For every 2 rotten apples, 8 were **not rotten**. How many apples were rotten?

(1) 18

(2) 36

(3) 45

(4) 90

10. $\frac{1}{3}$ of Heather's savings is equal to $\frac{3}{5}$ of her expenditure. Find the ratio of her savings to her expenditure.

(1) 1 : 3

(2) 3 : 1

(3) 5 : 9

(4) 9 : 5

11. Shafiqa arranged some fraction cards in ascending order as shown below. After she had arranged the cards, she realised that she had left out a card with the fraction $3\frac{1}{3}$. Where should Shafiqa place this card?

$\frac{3}{2}$	$\frac{7}{3}$	$\frac{13}{4}$	$\frac{27}{8}$	$\frac{16}{4}$
A	B	C	D	E

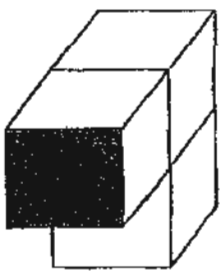
(1) Between A and B

(2) Between B and C

(3) Between C and D

(4) Between D and E

12. The solid shown is made up of 3 cubes. The area of the shaded surface is 16 cm^2. What is the volume of the solid?



(1) 48 cm^3

(2) 64 cm^3

(3) 128 cm^3

(4) 192 cm^3

13. In the figure, the shaded part is obtained by removing a semi-circle of diameter 7 cm from a square of side 12 cm.

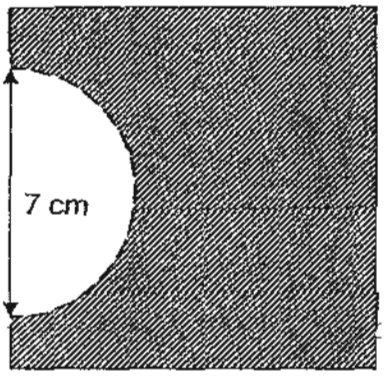
Find the perimeter of the shaded part. (Take $\pi = \frac{22}{7}$)

(1) 47 cm

(2) 52 cm

(3) 59 cm

(4) 63 cm



14. A caterpillar climbed up a pole that is 5 m high. It climbed up 2 m in every 40 min but slid 0.5 m downwards in the next 20 min. At this rate, how long did the caterpillar take to reach the top of the pole?

(1) 2 h 40 min

(2) 2 h 50 min

(3) 3 h 05 min

(4) 3 h 20 min

15. Each box in the table below is to be filled with the numbers 1, 2, 3 or 4. If each number appears **only once** in each row, column or diagonal, which number would **A** represent?

(1) 1

(2) 2

(3) 3

(4) 4

3			
	1		
2		4	
		A	

Booklet B

Do not write in this column

Name:_____( ) **Class:** P6 SY / C / G / SE / P

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. Express $2\frac{3}{5}$ as a decimal.

Ans: _____

17. At a party, the number of boys is $\frac{2}{7}$ the number of girls. What is the ratio of the number of boys to the total number of children at the party?

Ans: _____

18. A car cost \$62 000. It was sold at a discount of 10%. How much was the discount?

Ans: \$_____

19. Jessie has 4 blue markers and 5 green markers. What percentage of the blue marker is the green marker?

Ans: _____%

4

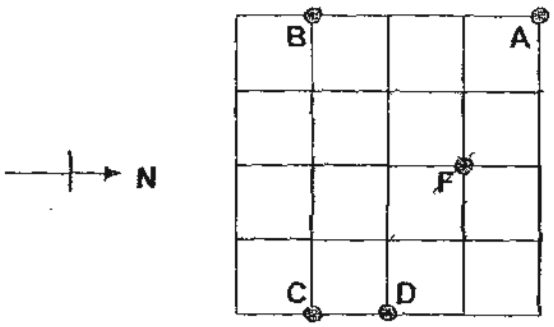
20. Mr Sim exchanged a fifty-dollar note for 50¢ coins. How many 50¢ coins did he receive?

Do not write in this column

Ans: _____

---

21. Sharon is standing at Point F and facing the West. If she makes a 225° clockwise turn, which point would she be facing?



Ans: _____

---

22. Huili can type *y* words in 3 minutes. At this rate, how many words can she type in an hour? (Express your answer in terms of *y*.)

Ans: _____

---

23. Each day, Miss Wong starts work at 21 30 and finishes at 05 15. How many hours does she work each day?

Ans: _____ hours

4

37

Do not write in this column

24. At a fund-raising event, each staff of the fund-raising organisation brought *either* 1 guest **or** 2 guests. If the ratio of the number of staff to the number of guests was 3:5, what fraction of the staff brought 2 guests?

Ans: _____

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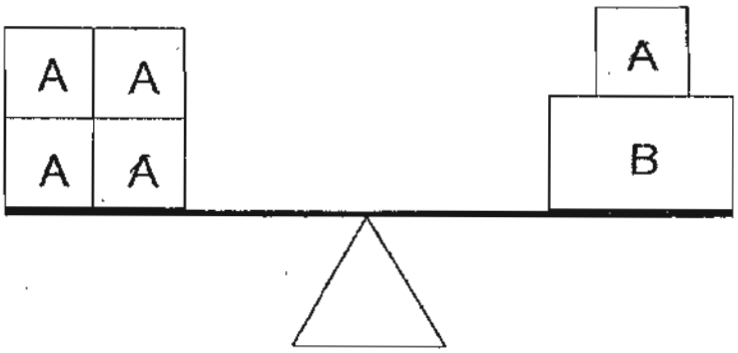
25. A and B are wooden blocks. If 4 blocks of A weigh 1400 g, what is the mass of Block B?



Ans: _____ g

2

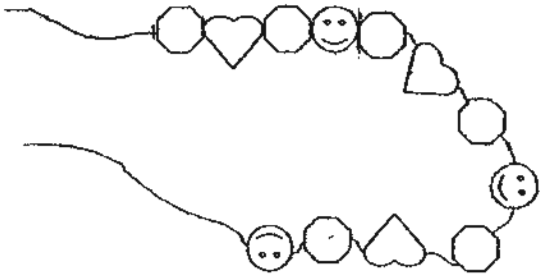
Questions **26** to **30** carry 2 marks each. Show your working clearly in the space for each question and write your answers in the spaces provided.
For questions which require units, give your answers in the units stated. **(10 marks)**

Do not write in this column

26. Felicia saved a total of $3.30 in three days. Each day, she saved 30 cents more than the previous day. How much did she save on the first day?

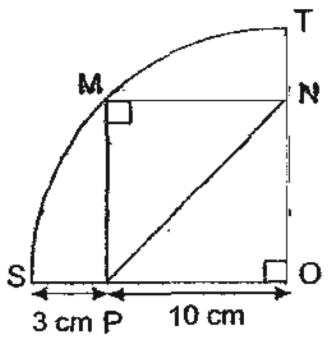
Ans: $_____

27. Celeste made a necklace using 84 beads of three different shapes. The beads formed a repeated pattern as shown in the picture below. How many ◯-shaped beads did she use?



Ans: _____

28. MNOP is a square within a quadrant OST. Find the length of the line NP.



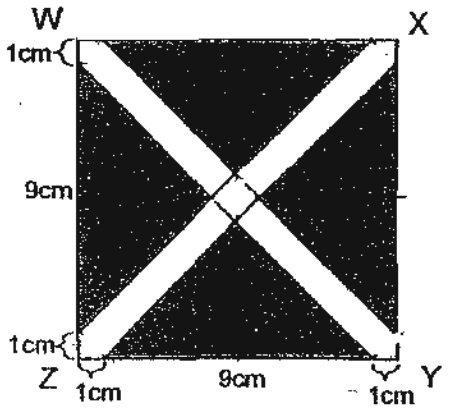
Ans: _____ cm

6

39.

29. WXYZ is a square with each side divided into 3 segments of length 1 cm, 9 cm and 1 cm respectively, as shown in the diagram below. Find the total area of the four shaded triangles.

Do not write in this column



Ans: _____ cm^2

---

30. At a party, there were 30 Malays and Indians. The rest of the people were Chinese. 14 people were not Malays and 20 people were not Indians. How many people were at the party?

Ans: _____

4

End of Paper 1

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SINGAPORE CHINESE GIRLS' SCHOOL

PRELIMINARY EXAMINATION 2010

PRIMARY 6

MATHEMATICS

PAPER 2

Name : _____( ) 24 August 2010

Class : Primary 6

	Mark	Max Mark	Parent's Signature
Paper 2		60	

18 Questions
60 Marks

Total Time For Paper 2: 1 h 40 min

INSTRUCTIONS TO CANDIDATES
Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

Questions **1** to **5** 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)**

Do not write in this column

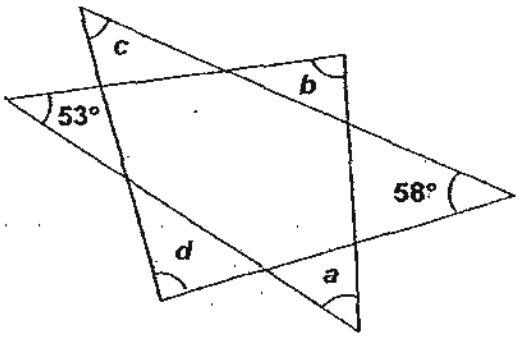
---

1 The length of a piece of rope is 2 m. It is ***p*** cm longer than a piece of string. What is the total length of the rope and the string?

Ans: _____ cm

---

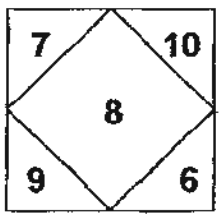
2 The figure below is made up of two triangles. Find ∠a + ∠b + ∠c + ∠d.

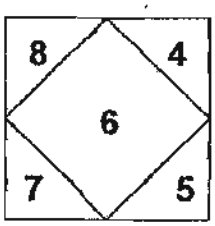


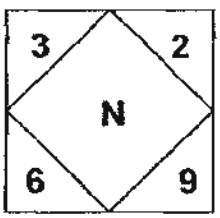
Ans: _____ °

---

3 Study the following numbers carefully. What is the value of **N**?







Ans: _____

6

Do not write in this column

4 A motorcycle travels 3 times as fast as a bicycle. If the motorcycle travels 126 km at a speed of 63 km/h, how much longer will it take the bicycle to travel the same distance?

Ans: _____ h

5 Joan puts some black buttons and white buttons equally into two boxes. The ratio of the number of black buttons to the number of white buttons in the first box is 3 : 2. The ratio of the number of black buttons to the number of white buttons in the second box is 7 : 3. What is the ratio of the total number of black buttons to the total number of white buttons in both boxes?

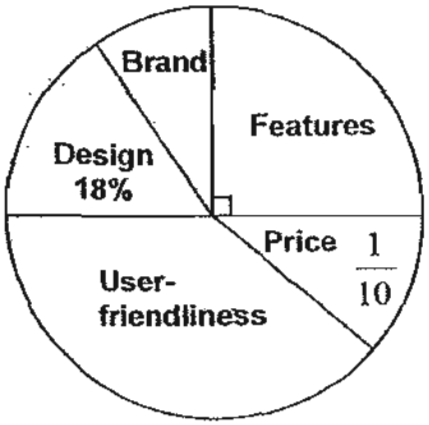
Ans: _____

4

For questions 6 to 18, show your working clearly in the space below each question and write your answers in the spaces provided. The number of marks awarded is shown in brackets [ ] at the end of each question or part-question. **(50 marks)**

Do not write in this column

6. A mobile phone manufacturer conducted a survey on a group of consumers to find out the various factors affecting consumers' choices when purchasing mobile phones. The pie chart below represents the data collected from the survey.



If 240 more consumers consider the design of the phone more important than the price of the phone, how many consumers chose 'User-friendliness' as the most important factor of consideration when purchasing a mobile phone?

Ans: _____ [3]

3

Do not write in this column

7. At a game stall, every child needed 4 tokens to exchange for a prize, while an adult needed 5 tokens. Given that $\frac{2}{3}$ of the people who exchanged their tokens for prizes were children and total of 1092 tokens were collected by the game stall, how many tokens were collected from the adults?

Ans: _____ [3]

8. Jia Hui had 350 jelly beans. 52% of them were orange flavoured. She ate some of the orange flavoured jelly beans and the percentage of orange flavoured jelly beans decreased to 44%. How many orange flavoured jelly beans did Jia Hui eat?

Ans: _____ [3]

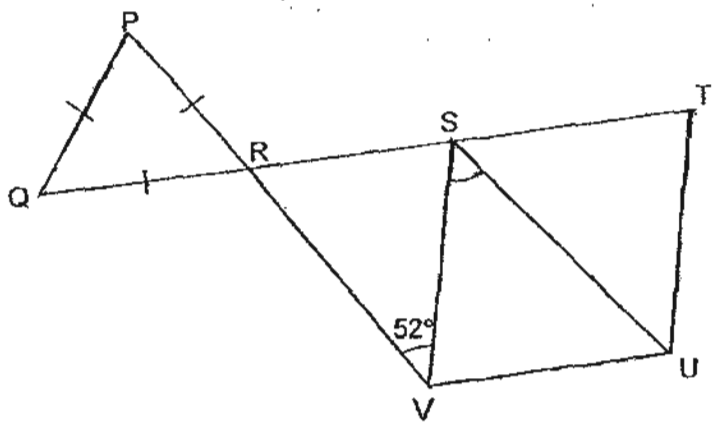
6

9. The average number of fishballs sold by Stall X and Stall Y was 900. The average number of fishballs sold by Stall X and Stall Z was 600. If the ratio of fishballs sold by Stall Y to fishballs sold by Stall Z was 5 : 2, find the number of fishballs sold by Stall Y.

Do not write in this column

Ans: _____ [3]

10. In the figure, PQR is an equilateral triangle and STUV is a rhombus. QRST is a straight line and ∠RVS = 52°. Find ∠VSU.

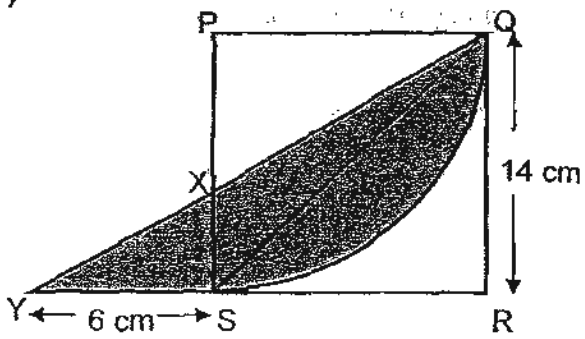


Ans: _____ [3]

6

11. The figure below shows a quarter circle drawn within a square PQRS of sides 14 cm. The length of SY is 6 cm. QXY and RSY are straight lines. Find the area of the shaded part. (Take $\pi = \frac{22}{7}$)

Do not write in this column



Ans: _____[4]

12. A car and a lorry started a journey from a town at different times of the day. The lorry left the town at 12 noon and travelled at an average speed of 50 km/h. The car left the town at 1 p.m. but it caught up with the lorry after travelling 250 km. Assuming that both the car and lorry travel at a constant speed throughout the journey, how far apart were the lorry and the car at 6 p.m.?

Ans:_____[4]

8

13. Terry bought a vase which he decides to sell. If he sells the vase at a discount of 20%, he makes a gain of $150. If he sells it at a 45% discount, he loses $325. How much did Terry pay for his vase?

Do not write in this column

Ans: _____ [4]

4

14. Based on a survey conducted among a group of pupils, $\frac{3}{5}$ of the pupils and an additional 15 pupils live in HDB flats. $\frac{1}{3}$ of the remaining pupils and an additional 30 pupils live in condominiums. The rest of the pupils live in other types of housing. Given that 404 pupils live in other types of housing, how many pupils participated in the survey?

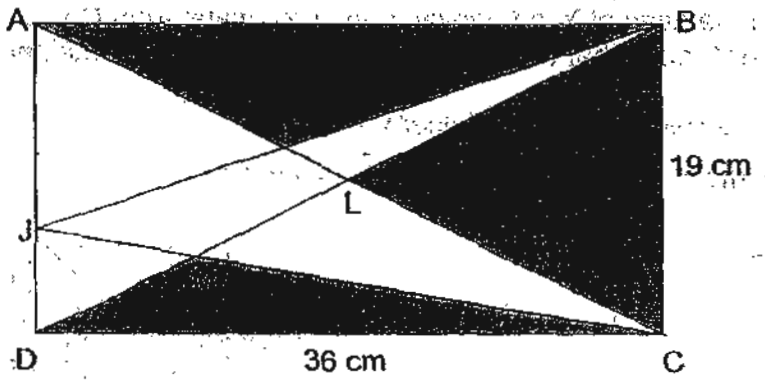
Do not write in this column

Ans: _____ [4]

4

15. In the figure below, not drawn to scale, ABCD is a rectangle of sides 36 cm by 19 cm. The area of the quadrilateral JKLM is 38 cm^2. Find the ratio of the shaded area to the unshaded area.
(Express your answer in its simplest form.)

Do not write in this column



Ans: _____[4]

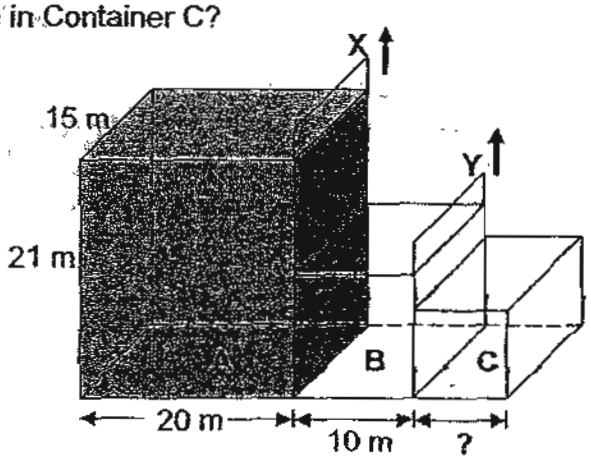
4

16. The diagram below shows 3 containers of different dimensions, each separated by a partition. Container A, measuring 20 m by 15 m by 21 m, is filled with water to its brim. Container B is an empty cuboidal container with a length of 10 m. The partition at X is lifted to release $\frac{1}{4}$ of the water from Container A into Container B, after which the partition is slid down to separate Containers A and B again. Next, the partition at Y is removed and some water from Container B flows into Container C such that the height of the water level on Container B and C is 7 m.

Do not write in this column

(a) What is the length of Container C?

(b) How many m^3 of water are there in Container C?



Ans: (a) _____ [3]

(b) _____ [2]

5

51

17. At a fitness carnival, 1600 people participated in a Mass Dance and Taiji. 30% of the 1300 Mass Dance participants were adults. 40% of the Taiji participants were children. During the break, some Mass Dance participants went on to participate in Taiji, while some Taiji participants went on to participate in the Mass Dance. After the change, 25% of the Mass Dance participants and 75% of the Taiji participants were adults. How many Mass Dance participants were there after the change?

Do not write in this column

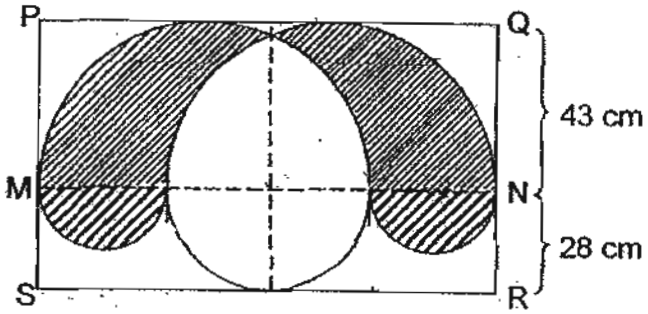
Ans: _____ [5]

5

18 The figure below, not drawn to scale, is made up of semi-circles in a rectangle PQRS. MN is the common baseline for all the semi-circles.

(a) Find the length of SR.

(b) Using the calculator value of π, find the perimeter of the shaded parts. (Give your answer correct to 2 decimal places.)



Do not write in this column

Ans: (a) _____ [2]

(b) _____ [3]

5

End of Paper
— Please check your work thoroughly —

53

ANSWER SHEET

EXAM PAPER 2010

SCHOOL : SCGS PRIMARY
SUBJECT : PRIMARY 6 MATHEMATICS

TERM : PERLIMINARY

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

16)2.6 **17)2:9** **18)$6200** **19)125%** **20)100 50¢ coins**

21)Point C **22)20y words** **23)7¾ hours** **24)2/3 staff** **25)1050g**

26)$0.80 **27)42 beads** **28)13cm** **29)81cm^2** **30)32 people**

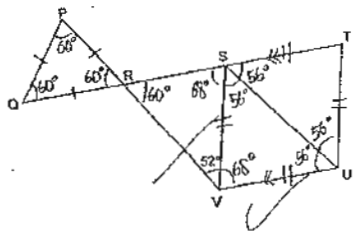
Paper 2

1)string---(200 – p)cm **Total---(200 + 200 – p)cm** **=(400 – p)cm**	**2)∠a+∠b---127°** **∠c + ∠d---122°** **total ----249°**
3)5	**4)4h**
5)13:7	**6)8%---240** **1%---30** **10%--300** **User-friendliness---40%** **40%---1200 consumers**
7)1 set---(4 x 2)+(5 x 1)=8 + 5 =13 **? sets---84** **Adults---84** **? tokens---84 x 5 = 420 tokens**	**8)at first---182** **rest---168** **56%---168** **1%---3** **44%---132** **eat---182 – 132 = 50 jelly beans**

9)x + y ---900 x 2 = 1800
x+ z---600 x 2 = 1200

3u---1800 – 1200 = 600
1u---200
y---200 x 5 = 1000 fishballs

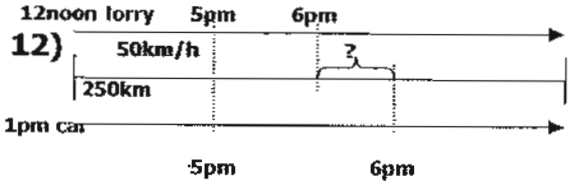
10)



Ans: 56°

11)Area of △--- ½ x B x H
= ½ x 6 x 14 = 42cm2
Area of ∠--- ¼ x 22/7 x 14 x 14
= 154cm2
Area of A--- ½ x 14 x 14 = 98cm2
Area of B---154 – 98 = 56cm2
Total---42 + 56 = 98cm2

12)



speed of car---62.5km/h
1h---car----62.5km
lorry---50km
Diff.----12.5km

13)discount 20%---80% u.p(+$150)
discount 45%---55%u.p(-$325)

25% u.p.---$150 + $325 = $475
1% u.p.---$19
100%u.p.---$1900
Terry pay---$1370

14)2/3 remain---434
1/3 remain---217
remain---651
2/5---666
1/5---333
? pupils---1665 pupils

15)Unshaded---(½x19x36)cm2–38cm2
= 342cm2
= 304cm2
shaded---(19x36)–304cm2=380cm2

S : U
380 : 304
= 5 : 4

16)a)container A---20 x 15 x 21
= 6300m3
¼ water---1575m3
Height---1575
10x15 = 10.5m
10.5m – 7m = 3.5m
3.5 x 10 x 15 = 525m3
525m3÷7 = 7.5m
7.5m ÷15m = 5m
b)C---5 x 15 x 7 = 525m3

17)1260 participants

18)b)circumference ---Π x 86
=86Πcm
circumference ---Π x 30
=30Πcm
Total ---364.424cm
≈364.42cm

18)a)28cm + 28cm + 30cm + 30cm
= 116cm

57