

Math Teacher:



**RAFFLES GIRLS' PRIMARY SCHOOL
PRELIMINARY EXAMINATION
MATHEMATICS (PAPER 1)
PRIMARY 6**

Name: _____ ()

Form Class: P6 _____

Date: 23 August 2011

Duration: 50 min

Your Score (Out of 100 marks)			
Your Score (Out of 40 marks)			
		Banded Math Class	Level
PAPER 1 (40%)	Highest Score		
	Average Score		
TOTAL (100%)	Highest		
	Average Score		
Parent's Signature			

INSTRUCTIONS TO CANDIDATES

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer **ALL** questions and show all working clearly.
4. **NO** calculator is allowed for this paper.

SECTION A (20 marks)

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 your answer (1, 2, 3 or 4) on the OAS provided. All diagrams are not drawn to scale. No calculators may be used for this paper

1. In 1 234 567, which digit is in the ten thousands place?
 - (1) 1
 - (2) 2
 - (3) 3
 - (4) 4

2. How many eighths are there in $5\frac{3}{4}$?
 - (1) 19
 - (2) 23
 - (3) 38
 - (4) 46

3. 4 thousands, 4 tenths and 4 hundredths is _____.
 - (1) 400.404
 - (2) 4000.44
 - (3) 4040.04
 - (4) 4404.04

4. Which of the following is the same as 80 040 g?
 - (1) 8 kg 40 g
 - (2) 80 kg 4 g
 - (3) 80 kg 40 g
 - (4) 80 kg 400 g

5. A wire is used to form the square in Figure A.
The same piece of wire is used to form the rectangle in Figure B.
What is the length of the rectangle?

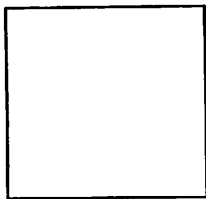


Figure A

10 cm

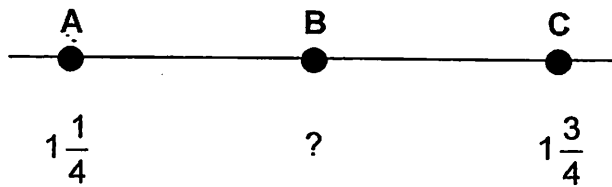
2 cm



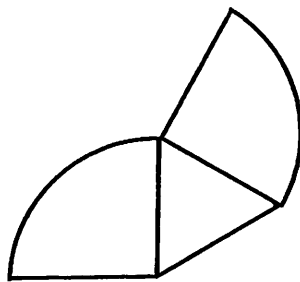
Figure B

- (1) 8 cm
- (2) 18 cm
- (3) 38 cm
- (4) 50 cm
6. A number when rounded off to the nearest hundred is 200.
What is the largest possible number?
- (1) 199
- (2) 250
- (3) 249
- (4) 299
7. Trisha ate $\frac{2}{9}$ of a pizza and decided to divide the remaining pizza ^{equally among} ~~to~~ 14 of her friends. What fraction of the pizza did each of her friends receive?
- (1) $\frac{1}{63}$
- (2) $\frac{1}{18}$
- (3) $\frac{1}{9}$
- (4) $\frac{7}{9}$

8. In the number line below, A represents $1\frac{1}{4}$, C represents $1\frac{3}{4}$ and $AB = BC$.
What fraction is represented by B?



- (1) 1.50
(2) 1.55
(3) 1.65
(4) 1.70
9. The length of a school bus is about _____.
- (1) 1 m
(2) 10 m
(3) 100 m
(4) 1 000 m
10. The following figure is made up of 2 quadrants and an equilateral triangle of side 7 cm. Find its perimeter. (Take $\pi = \frac{22}{7}$)

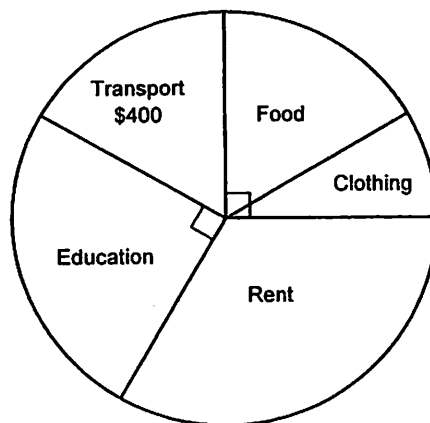


- (1) 98 cm
(2) 77 cm
(3) 43 cm
(4) 32 cm

11. Susan baked some egg tarts. She gave 40 % of the egg tarts to her neighbours and ate 50 % of the remaining egg tarts with her family members. She then finally had 36 egg tarts left. How many egg tarts did she bake?

- (1) 60
- (2) 72
- (3) 120
- (4) 360

12. The pie chart below illustrates Mrs Lim's expenditure in a particular month.



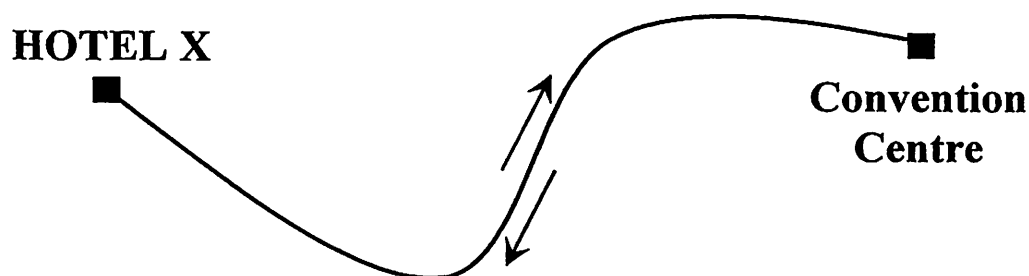
Mrs Lim spent as much money on transport as on food.

She spent $\frac{1}{2}$ as much on clothing as on food.

How much did she spend on rent?

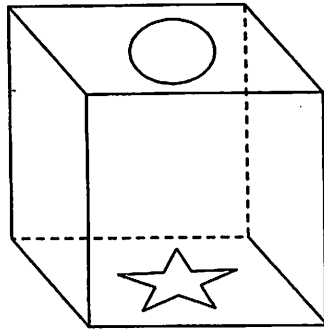
- (1) \$ 400
- (2) \$ 600
- (3) \$ 800
- (4) \$ 1200

13. A shuttle bus travelled once a day from Hotel X to Convention Centre and back to the hotel at an average speed of 68 km/h for 2 h. It would pick passengers up at intervals of 17 km. How many times would the shuttle bus stop to pick passengers up after it has departed from the Convention Centre to Hotel X?

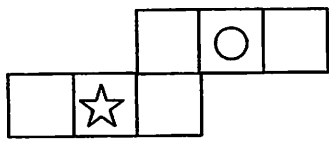


- (1) 6
(2) 7
(3) 3
(4) 4
14. Alan and Bryan have some twenty-cent coins in the ratio 4 : 7.
Given that Bryan has \$9 more than Alan, how many twenty-cent coins does Alan have?
- (1) 12
(2) 21
(3) 60
(4) 105

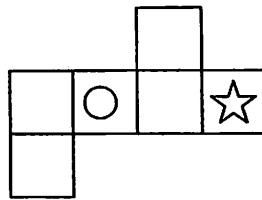
15. Linda has a cube as shown below. She cuts a circle on the top of the cube and a star on the bottom of the cube.



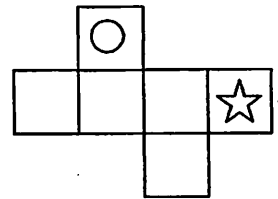
Which of the following represent a net of this cube?



A



B



C

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

SECTION B (20 marks)

Questions 16 to 25 carry 1 mark each. Questions 26 to 30 carry 2 marks each. Write your answers in the spaces provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale.

16. A machine takes 10 minutes to saw a piece of wood into 7 pieces.
How long does it take to saw another identical piece of wood into 49 pieces?

Ans: _____ min

17. Find the value of $\frac{7}{24} \times \frac{8}{21}$. Express your answer in its simplest form.

Ans: _____

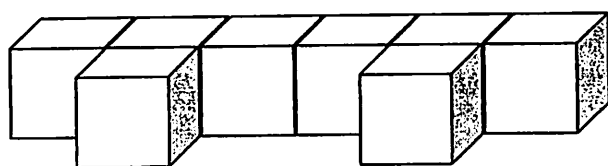
18. What is the value of $55.55 \div 11$?

Ans: _____

19. Jane's watch was slower than the actual time by 10 min.
The time by Jane's watch was 7.55 p.m..
What was the actual time in 24-hour clock?

Ans: _____

20. The figure below is made up of 2-cm cubes.
Find the volume the figure.

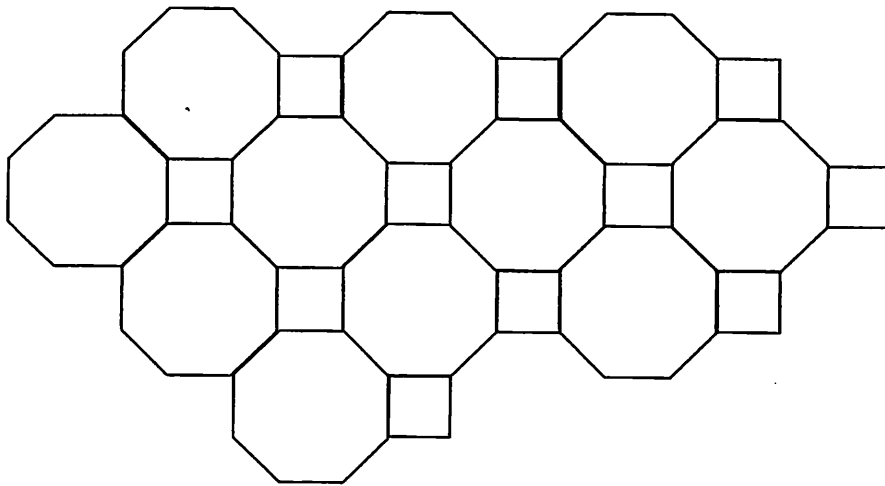


Ans: _____ cm³

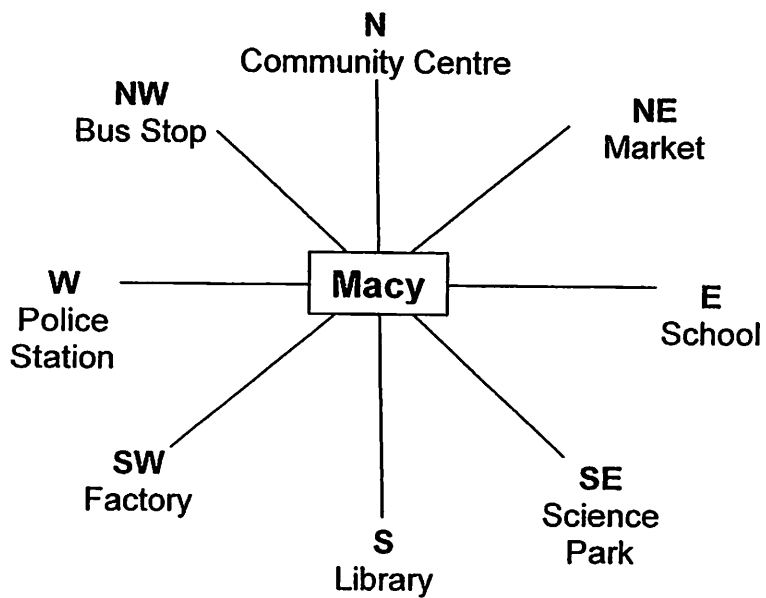
21. Jenny spent \$104 on a dress and had \$56 left. What percentage of her money did she have left?

Ans: _____ %

22. Shade a unit shape of the tessellation below.



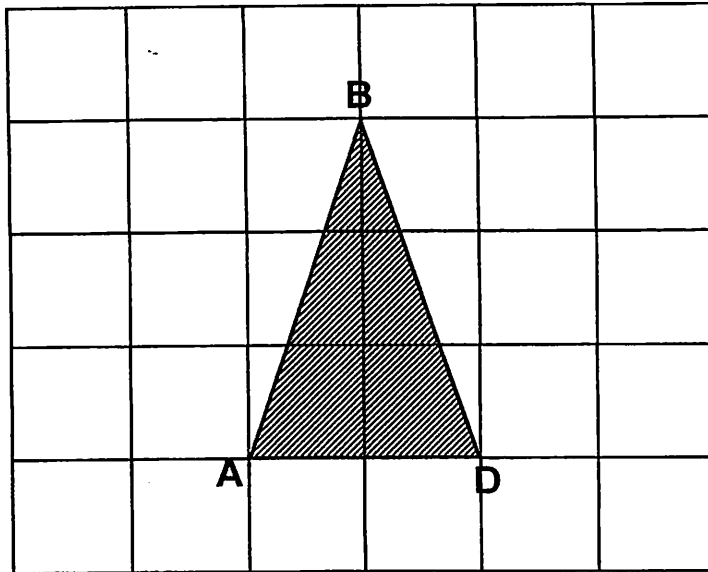
23.



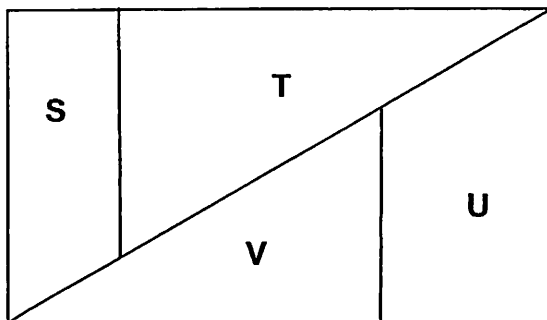
Macy is facing the Police Station now.
 How many degrees anti-clockwise must she turn so that she will be facing the Science Park?

Ans: _____°

24. An isosceles triangle ABD is drawn on the square grids as shown below. Draw the parallelogram ABCD by completing the figure below.



25. The figure below shows a rectangle divided into 4 parts. The area of S is $\frac{1}{4}$ the area of T. The ratio of the area of T to the area of U is 2 : 1. Find the ratio of the area of V to the area of U.

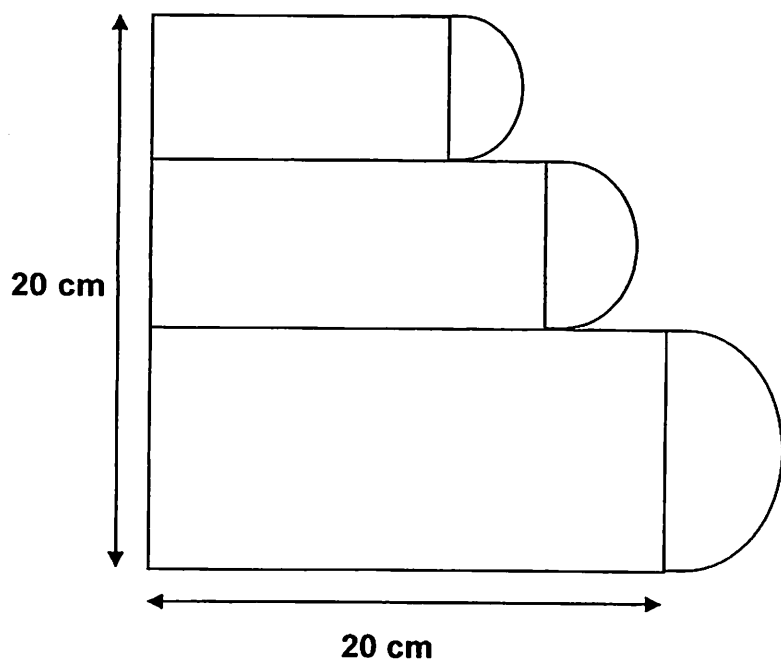


Ans: _____

26. Mr Tan bought 6 magazines and 3 books for \$63.
A magazine cost \$3 less than a book.
Find the cost of each magazine.

Ans: \$ _____

27. The figure below is made up of 3 rectangles and 3 semi-circles.
Find the perimeter of the figure. (Take $\pi = 3.14$)



Ans: _____ cm

28. The table below shows the number of bowls of noodles sold last week.

Day	Number of bowls of noodles sold
Monday to Friday	$3n$ per day
Saturday to Sunday	$(5n + 1)$ per day

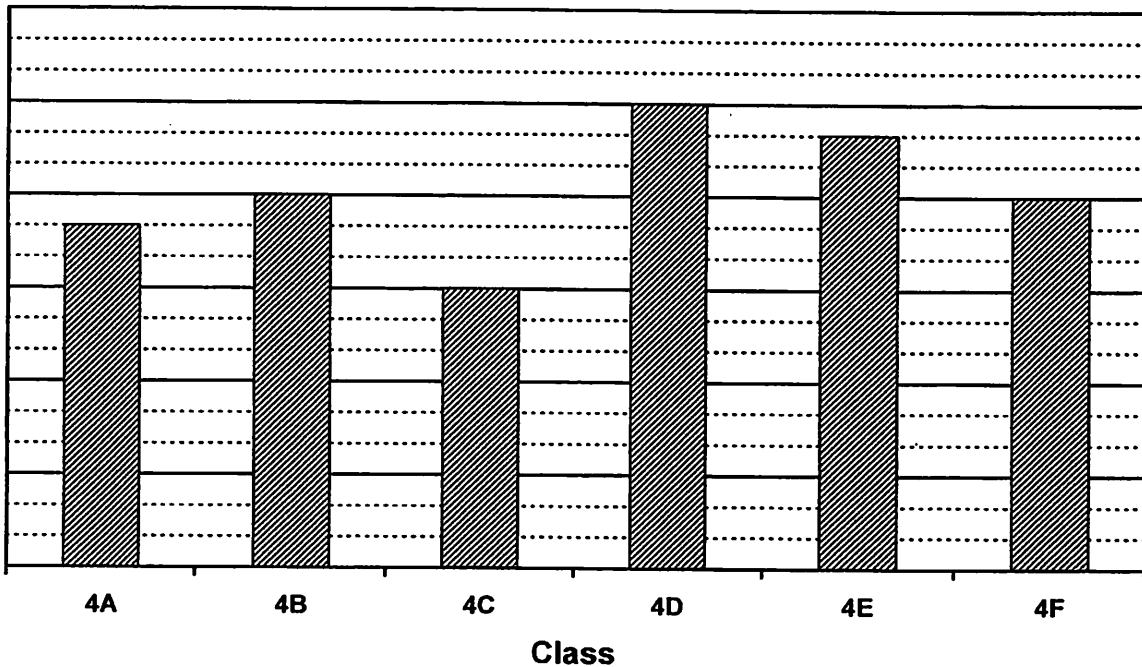
What was the total number of bowls of noodles sold last week?
Express your answer in terms of n in the simplest form.

Ans: _____

29. A lorry and a car left a town at the same time. The speed of the lorry was 60 km/h and the speed of the car was 90 km/h. How long would the car take to be 66 km ahead of the lorry?

Ans: _____ h

30. The following bar chart shows the amount of money collected from six Primary 4 classes during the CIP fair. Given that the difference between the average amount of money collected from Class 4A, 4B and 4C and the average amount of money collected from Class 4D, 4E and 4F was \$90, find the amount of money collected by Class 4C.



Ans: \$ _____

-End of Paper-

Please check your work carefully ☺

Math Teacher:



**RAFFLES GIRLS' PRIMARY SCHOOL
PRELIMINARY EXAMINATION
MATHEMATICS (PAPER 2)
PRIMARY 6**

Name: _____ ()

Form class: P6 _____

Date: 23 August 2011

Duration: 1 h 40 min

Your Score (Out of 60 marks)		
	Banded Math Class	Level
Highest Score		
Average Score		

INSTRUCTIONS TO CANDIDATES

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer **ALL** questions and show all working clearly.
4. The use of calculator is allowed for this paper.

Question 1 to 5 carry 2 marks each.

Show your working clearly in the space provided for each question and write your answer in the spaces provided. All diagrams are not drawn to scale.

Marks will be awarded for relevant working. The number of marks available is shown in brackets [] at the end of each question or part-question.

1. Two dozen exercise books cost $\$3k$.
Find the cost of 96 exercise books in terms of k .

Ans: \$ _____ [2]

2. 3750 people visited the carnival on Tuesday.
The number of tourists who visited the carnival on Tuesday was 25% more than the number of tourists on Monday.
How many people visited the carnival over the two days?

Ans: _____ [2]

3. Arrange the following numbers in ascending order.

$$\frac{5}{4}$$

2

1.22

$$1\frac{3}{4}$$

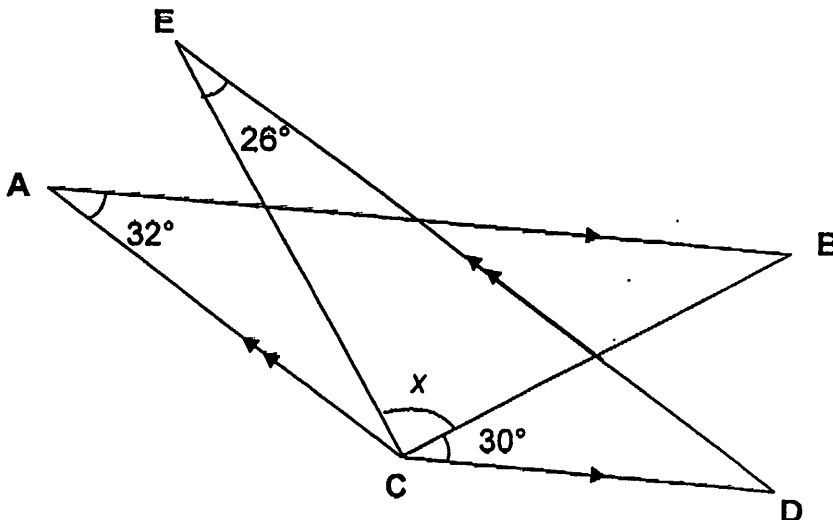
Ans: _____ [2]

4. Fill in the boxes below with different operators (+ - x ÷) to make the expression correct. (You are allowed to use the same operator twice)

$$7 \square (7 \square 7) \square 7 = 5$$

5. In the figure below, AB // CD and AC // ED.

CE and BC are straight lines. Find $\angle x$.



Ans: _____ ° [2]

For questions 6 to 18, show your working clearly in the space provided for each question and write your answers with the correct units in the spaces provided.

The number of marks available is shown in brackets [] at the end of each question or part-question.

6. Five pupils, Ali, Brian, Charlie, Dan and Emil, sat for a test.

Ali, Brian and Charlie's average score was y .

Dan's score was y .

The total score for Dan and Emil was 172 marks.

(a) Express the average score for all the pupils in terms of y .

(b) Given that Dan's score was 78, find the average score for all the pupils.

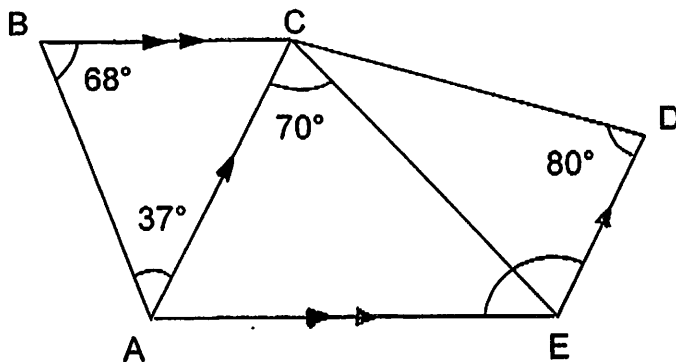
Ans: (a) _____ [2]

(b) _____ [1]

7. In three years' time, Jimmy's age will be twice that of Mary's age.
 Three years ago, Jimmy's age was 4 times that of Mary's age.
 How old is Mary now?

Ans: _____ [3]

8. In the figure below, ABCE and ACDE are trapeziums.
 Find $\angle AED$.



Ans: _____ [3]

9. A toy purchaser bought some toy trains and toy cars. A toy train cost 6 times as much as a toy car. He spent $\frac{3}{8}$ of his money on buying toy cars and $\frac{1}{5}$ of his remaining money on 7 toy trains. How many toy cars did he buy?

Ans: _____ [3]

10. The pattern below is made up of circles and triangles. Study the pattern carefully and answer the questions below.

Pattern 1	Pattern 2	Pattern 3	Pattern 4
○	○ ▲ ○ ○	○ ▲ ▲ ○ ▲ ▲ ○ ○ ○	○ ▲ ▲ ▲ ○ ▲ ▲ ▲ ○ ▲ ▲ ▲ ○ ○ ○ ○

- (a) How many circles are needed to form pattern 5?
 (b) How many triangles are needed to form pattern 10?
 (c) The number of circles used in Pattern X is exactly the same number of triangles used to form Pattern 32. What is X?

Ans: (a) _____ [1]

(b) _____ [1]

(c) _____ [2]

11. Jack, Kristine and Lina painted some chairs for their school classrooms.

Jack painted $\frac{1}{2}$ of the number of the chairs.

Kristine and Lina painted the remaining number of chairs in the ratio of 3 : 5.

Jack painted 65 more chairs than Kristine.

(a) How many chairs did Jack and Lina paint altogether?

(b) The school would save \$4 for every chair painted, What was the total savings for the school?

Ans: (a) _____ [3]

(b) _____ [2]

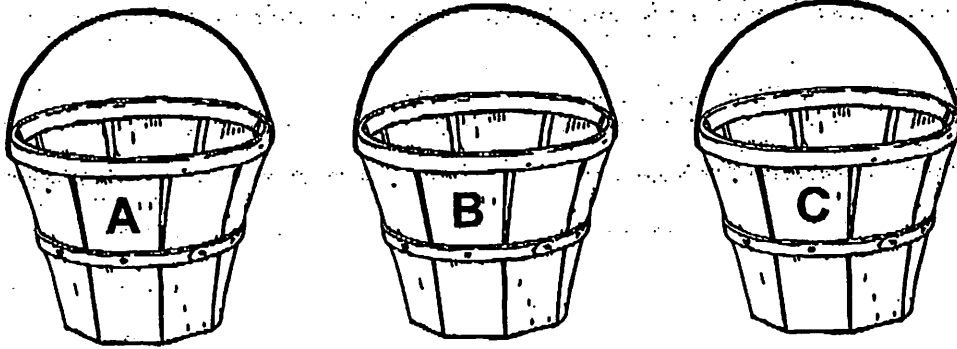
12. The average price of 9 skirts and 4 dresses is \$45.40.

The average price of the dresses is \$38.65.

Find the difference in the average price of a skirt and a dress.

Ans: _____ [4]

13.



Buckets A, B and C contains 16 litres, 12 litres and 14 litres of water respectively.

$\frac{3}{8}$ of the water from Bucket A was poured into Bucket C.

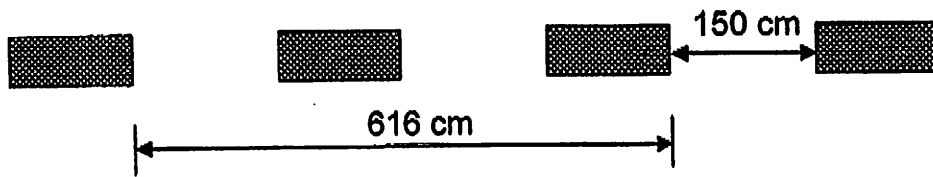
Then $\frac{1}{3}$ of the water from Bucket B was poured equally into Buckets A and C.

In the end, $\frac{4}{11}$ of the water from Bucket C was poured back into Bucket A.

How many litres of water were in Bucket C in the end?

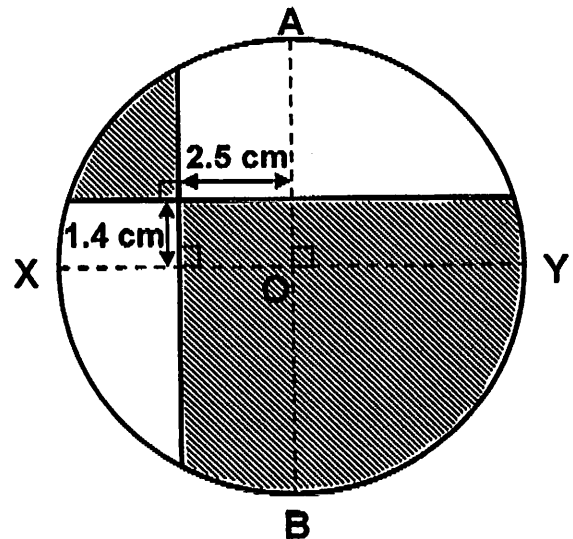
Ans: _____ [4]

- One part
- 14(a) Part of a car wheel was stained with paint on its surface. The diagram below showed the tyre marks made by the car wheel when the vehicle moved through a certain distance.
Find the circumference of the car wheel.



Ans: (a) _____ [1]

- 14(b) The diagram below shows a circle with centre O. AB and XY are diameters of the circle.
Find the difference between the shaded and unshaded areas.



Ans: (b) _____ [2]

15. A bus travelled at a uniform speed from Sunshine Town to Happy Town. It passed a car which was travelling at a uniform speed of 80 km/h in the opposite direction. 4 hours after they had passed each other, the bus reached Happy Town and the car was 30 km away from Sunshine Town. If the bus took 9 hours to travel from Sunshine Town to Happy Town, find the distance between the two towns.

Ans: _____ [4]

16. There were 225 apples and 253 oranges in Box A.
There were 260 apples and 212 oranges in Box B.
Mr Chia moved some apples and oranges from Box B to Box A.
In the end, 40% of the fruits in Box A and 70% of the fruits in Box B were apples. How many fruits did Mr Chia move from Box B to Box A?

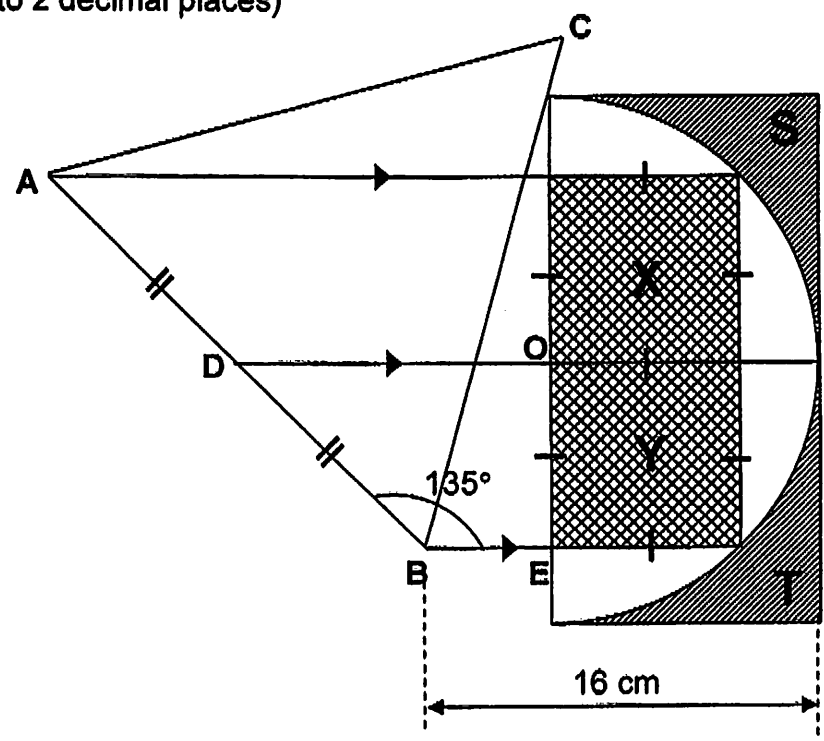
Ans: _____ [5]

17. The figure below is made up of a semicircle with centre O, squares, trapeziums and an equilateral triangle ABC.

Given that $AD = DB = 11.75$ cm and $\angle ABE = 135^\circ$,

(a) find the total shaded area of two squares X and Y.
(Correct your answer to 2 decimal places)

(b) find the total perimeter of the shaded regions S and T.
(Correct your answer to 2 decimal places)



Ans: (a) _____ [2]

(b) _____ [3]

18. Beaker A and Beaker B contain some water.

If 46.5 ml of water is drained out from Beaker A, the volume of the water in Beaker A will be 60% that of the water in Beaker B.

If 35.2 ml of water is drained out from Beaker B, the volume of the water in Beaker B will be 85% that of the water in Beaker A.

What is the total volume of water in Beaker A and Beaker B?

Ans: _____ [4]

-End of Paper-

Please check your work carefully ☺

Setters: Tan Kim Kiam, Ee Bee Yian & Desmond Lee

RGPS Mathematics P6 Prelim 2011 Answers

MCQ

1 mark each

2 marks each

1)	3	6)	3	11)	3
2)	4	7)	2	12)	3
3)	2	8)	1	13)	3
4)	3	9)	2	14)	3
5)	2	10)	3	15)	1

1 mark each

16) 80 min

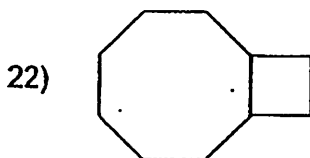
17) $\frac{1}{9}$

18) 5.05

19) 2005

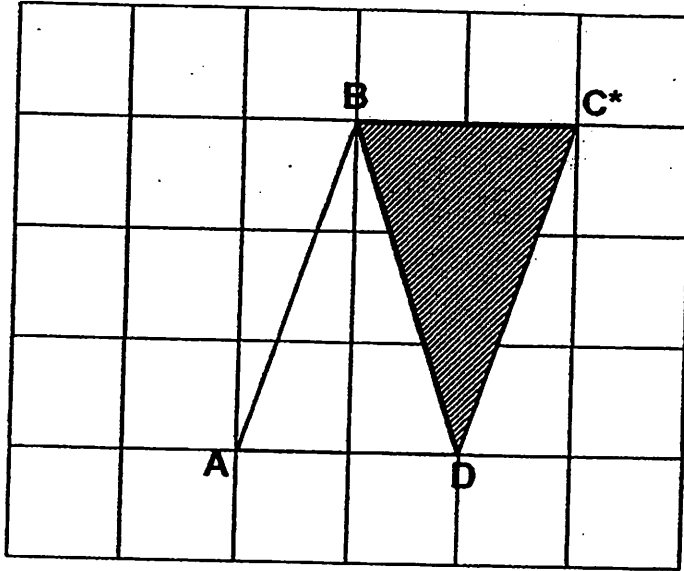
20) 64 cm^3

21) 35 %



23) 135°

24)



*Deduct M1/2 for missing label

25) 3 : 2

26) $\$54 \div 9$ [M1]

= $\$6$ [A1]

27) $20 \times 3 = 60$ } [M1]
 $(20\pi / 2) = 31.4$ }

$60 + 31.4 = \underline{91.4 \text{ cm}}$ [A1]

28) $15n + 5n + 1 + 5n + 1$ [M1]

= $25n + 2$ [A1]

29) Time taken = $\frac{66}{30}$ [M1]

= $2\frac{1}{5}$ or 2.2 [A1]

30) $\$90 \times 3$ [M1]

= $\$270$ [A1]

Paper 2

Qns	Solution	Remarks												
1)	24 books → \$3k 1 book → \$ $\frac{3k}{24}$ 96 books → \$ $\frac{3k}{24} \times 96 = \$12k$. [M1 A1]	3k x 4 [M1]												
2)	125% → 3750 (Tuesday) [M1] 1% → 30 [M1] 100% → 3000 (Monday) [A1] 3000 + 3750 = 6750 [A1] (OR) 225% → 6750	3750 ÷ 125 [M1]												
3)	1.22, $\frac{5}{4}$, $1\frac{3}{4}$, 2 [A2]	A0 for any transfer error/ misread												
4)	$7 - (7 + 7) \div 7 = 5$ [A2]	No partial marks												
5)	$180 - 32 - 26 - 30 = 92$ [M1 A1]													
6)	(a) $3y + 172$ or $3y + y - y + 172$ [M1] $(3y + 172) \div 5$ [A1] (b) $(3 \times 78 + 172) \div 5 = 81.2$ [A1]													
7)	<table border="0" style="width: 100%;"> <tr> <td style="width: 25%;"><u>3 years' time</u></td> <td style="width: 25%;"><u>3 years ago</u></td> <td style="width: 50%;">2 units → 6 years [M1]</td> </tr> <tr> <td>J : M</td> <td>J : M</td> <td>1 unit → 3 years</td> </tr> <tr> <td>2 : 1</td> <td>4 : 1</td> <td>3 + 3 = 6 [M1 A1]</td> </tr> <tr> <td>6 : 3</td> <td></td> <td></td> </tr> </table> <p style="text-align: center;">Ans: 6 years old</p>	<u>3 years' time</u>	<u>3 years ago</u>	2 units → 6 years [M1]	J : M	J : M	1 unit → 3 years	2 : 1	4 : 1	3 + 3 = 6 [M1 A1]	6 : 3			
<u>3 years' time</u>	<u>3 years ago</u>	2 units → 6 years [M1]												
J : M	J : M	1 unit → 3 years												
2 : 1	4 : 1	3 + 3 = 6 [M1 A1]												
6 : 3														

Qns	Solution	Remarks
12)	$\$38.65 \times 4 = \154.60 $9 + 4 = 13$ $\$45.40 \times 13 = \590.20 [M1] $\$590.20 - \$154.60 = \$435.60$ [M1] $\$435.60 \div 9 = \48.40 [M1] $\$48.40 - \$38.65 = \underline{\$9.75}$ [A1]	

Qns	Solution	Remarks																				
13)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Bucket A</th> <th>Bucket B</th> <th>Bucket C</th> </tr> </thead> <tbody> <tr> <td>Water at first</td> <td style="text-align: center;">16</td> <td style="text-align: center;">12</td> <td style="text-align: center;">14</td> </tr> <tr> <td>$\frac{3}{8}$ from A poured into C</td> <td> $\frac{3}{8} \times 16 = 6$ $16 - 6 = 10$ </td> <td style="text-align: center;">12</td> <td style="text-align: center;">$14 + 6 = 20$</td> </tr> <tr> <td>$\frac{1}{3}$ from B poured equally into A and C</td> <td style="text-align: center;">$10 + 2 = 12$</td> <td> $\frac{1}{3} \times 12 = 4$ $12 - 4 = 8$ </td> <td style="text-align: center;">$20 + 2 = 22$</td> </tr> <tr> <td>$\frac{4}{11}$ from C poured back into A</td> <td style="text-align: center;">$12 + 8 = 20$</td> <td style="text-align: center;">8</td> <td> $\frac{4}{11} \times 22 = 8$ $22 - 8 = 14$ </td> </tr> </tbody> </table> <p>Ans : <u>14 litres</u></p>		Bucket A	Bucket B	Bucket C	Water at first	16	12	14	$\frac{3}{8}$ from A poured into C	$\frac{3}{8} \times 16 = 6$ $16 - 6 = 10$	12	$14 + 6 = 20$	$\frac{1}{3}$ from B poured equally into A and C	$10 + 2 = 12$	$\frac{1}{3} \times 12 = 4$ $12 - 4 = 8$	$20 + 2 = 22$	$\frac{4}{11}$ from C poured back into A	$12 + 8 = 20$	8	$\frac{4}{11} \times 22 = 8$ $22 - 8 = 14$	<p>Award 0 m if they multiply the wrong capacity at the first step.</p> <p>M1</p> <p>M1</p> <p>M1 A1</p>
	Bucket A	Bucket B	Bucket C																			
Water at first	16	12	14																			
$\frac{3}{8}$ from A poured into C	$\frac{3}{8} \times 16 = 6$ $16 - 6 = 10$	12	$14 + 6 = 20$																			
$\frac{1}{3}$ from B poured equally into A and C	$10 + 2 = 12$	$\frac{1}{3} \times 12 = 4$ $12 - 4 = 8$	$20 + 2 = 22$																			
$\frac{4}{11}$ from C poured back into A	$12 + 8 = 20$	8	$\frac{4}{11} \times 22 = 8$ $22 - 8 = 14$																			

14)	<p>(a) $616 \text{ cm} \div 2 = 308 \text{ cm}$ [A1]</p> <p>(b) $5 \text{ cm} \times 2.8 \text{ cm} = 14 \text{ cm}^2$ [M1 A1] (M1) (A1)</p>	

15)	<p><i>bus</i> Lorry →</p> <p>-----+-----</p> <p>5h 4h</p> <p>Sunshine Town Happy Town</p> <p>30 km ← 90 km/h car</p> <p>Distance traveled by the car in the 4 h = $80 \times 4 = 320$ [M1]</p> <p>Distance travelled by the lorry in the 5 h = $(320 + 30) = 350 \text{ km}$</p> <p>In 5 hours → 350 km [M1]</p> <p>In 1 hour → 70 km</p> <p>In 9 hours → $9 \times 70 = \underline{630 \text{ km}}$ [M1, A1]</p>	
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16) Total no. of apples $\rightarrow 485$

Total no. of oranges \rightarrow

465

} Correct relation formed [M1]

$$40A + 70B \rightarrow 485$$

$$60A + 30B \rightarrow 465$$

$$120A + 210B \rightarrow 1455$$

$$120A + 60B \rightarrow 930$$

$$150B \rightarrow 525 \quad [M1]$$

$$50B \rightarrow 175$$

$$100B \rightarrow 350 \quad [M1]$$

$$\text{Moved} \rightarrow (260 + 212) - 350 \quad [M1]$$

$$= 122 \quad [A1]$$

17)	<p>(a) $*11.75 \times 11.75 = 138.0625$ [M1]</p> <p>Ans: 138.06 cm² [A1]</p> <p>(b) *Follow through and award M1 accordingly</p> <p style="padding-left: 20px;">** Twice the value used in (a)</p> <p>$\frac{1}{2} \times \pi \times 23.5^{**} = 11.75\pi$ [M1]</p> <p>$11.75\pi + (11.75 \times 4)$ [M1]</p> <p>\approx <u>83.91 cm</u> [A1]</p>	
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18)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; text-align: left;">A</td> <td style="width: 30%; text-align: left;">B</td> <td style="width: 40%;"></td> </tr> <tr> <td>3u</td> <td>5u</td> <td></td> </tr> <tr> <td>+46.5</td> <td>- 35.2</td> <td></td> </tr> <tr> <td>20</td> <td>: 17</td> <td></td> </tr> </table> <p>Identify $(3u + 46.5)$ and $(5u - 35.2)$</p> <p>$17(3u + 46.5) = 20(5u - 35.2)$</p> <p>$51u + 790.5 = 100u - 704$</p> <p>$1494.5 = 49u$</p> <p>$1u = 30.5$ [M1]</p> <p>$8u = 244$ [M1]</p> <p>$244 + 46.5 = 290.5$ [M1]</p> <p>Ans: 290.5 ml [A1]</p>	A	B		3u	5u		+46.5	- 35.2		20	: 17		
A	B													
3u	5u													
+46.5	- 35.2													
20	: 17													