

RAFFLES GIRLS' PRIMARY SCHOOL

PRELIMINARY EXAMINATION

MATHEMATICS

2006

Name :	Class: P6 Index No:
Date : 22 August 2006	Duration : 2h 15 min

Instructions to pupils:

- 1. Do not open this booklet until you are told to do so.
- 2. This paper consists of 3 parts; Section A, B and C.
- 3. Write your Name, Class and Index number clearly on all the booklets.
- 4. For question 1 to 15 in Section A, shade the correct oval on the Optical Answer Sheet (OAS) given.

	Maximum	Marks Obtained
Section A	20	
Section B	30	
Section C	50	
Total	100	

Class	Level
	Class

Name:	()	Class: P6
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Section A (20 marks)

Question 1 to 10 carry 1 mark each. Question 11 to 15 carry 2 marks each.

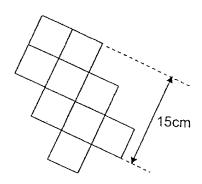
For each question, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS).

- 1. Which one of the following numbers is the greatest?
 - (1) 100 011
 - (2) 100 101
 - (3) 101 001
 - (4) 101 010
- 2. $99 \times 99 = 99 \times 9 + 99 + 99 \times$

What is the missing number in the box?

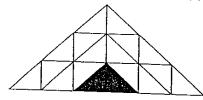
- (1) 9
- (2) 10
- (3) 89
- (4) 90
- 3. 500 + 2 tens + 0.2 + 2 thousandths = ____
 - (1) 500.402
 - (2) 520. 202
 - (3) 520. 220
 - (4) 520. 400

- 4. Express 80 m 5 cm in centimetres.
 - (1) 805
 - (2) 850
 - (3) 8005
 - (4) 8050
- 5. The figure below is made up of nine identical squares.
 What is the perimeter of the figure?



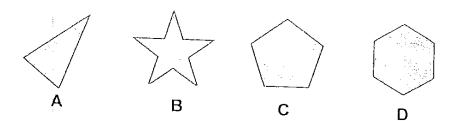
- (1) 48 cm
- (2) 80 cm
- (3) 108_icm
- (4) 180 cm
- The diameter of the Earth is about 12 756 km.
 Round off its diameter to the nearest hundreds.
 - (1) 12 700 km
 - (2) 12 760 km
 - (3) 12 800 km
 - (4) 13 000 km

7. What fraction of the figure below is shaded?



- (1) $\frac{1}{8}$
- (2) $\frac{1}{9}$
- (3) $\frac{1}{16}$
- (4) $\frac{1}{18}$
- 8. Express $3\frac{7}{25}$ as a decimal.
 - (1) 0.28
 - (2) 0.82
 - (3) 3.28
 - (4) 3.82
- 9. Xiu Fang and her brother consume 100 *ml* of milk each every morning. How many litres of milk will both of them consume in 2 weeks?
 - (1) 1.4 /
 - (2) 2.8 /
 - (3) 14 /
 - (4) 28 /

10. Study the shapes below carefully.

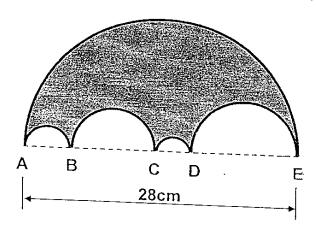


Identify the shapes which cannot be tessellated.

- (1) A and B only
- (2) C and D only
- (3) B and C only
- (4) B, C and D only
- 11. The figure below is made up of 5 semicircles.

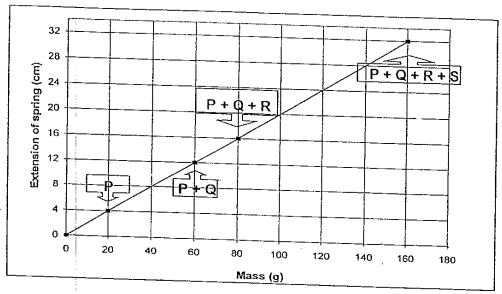
AB: BC: CD: DE is 2:3:1:4. Find the perimeter of the shaded part.

(Take π to be $\frac{22}{7}$)



- (1) 44 cm
- (2) 88 cm
- (3) 308 cm
- (4) 616 cm

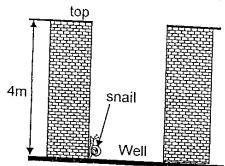
12. The line graph below shows the extension of a spring when various masses (P, Q, R and S) are hung on it.



What will be the extension of the spring if R and S are hung on it?

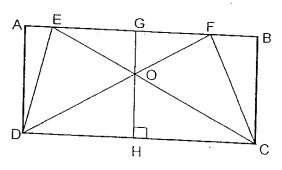
- (1) 12 cm
- (2) 16 cm
- (3) 20 cm
- (4) 24 cm
- 13. In Town A, 75% of the pupils had watched "Spider Man 2", 45 % of the pupils had watched "Superman Return" and 30% of them had watched both movies. If 10 pupils did not watch both the movies, how many pupils are there in Town A?
 - (1) 20
 - (2) 25
 - (3) 100
 - (4) 160

14. A snail was climbing out of a well which is 4 m deep as shown in the diagram below.



The snail could only climb up 2 m in the first 40 minutes, and would slide 0.5 m back for the next 20 minutes. How long would the snail take to reach the top of the well?

- (1) 80 minutes
- (2) 140 minutes
- (3) 160 minutes
- (4) 200 minutes
- 15. In the diagram below, ABCD is a rectangle. DE, CE, DF, FC and GH are straight lines. Given that GO: OH is 1:3, find the ratio of the area of ABCD to DFC to DOC.



- (1) 6:3:1
- (2) 6:3:2
- (3) 8:4:1
- (4) 8:4:3

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Class: P6

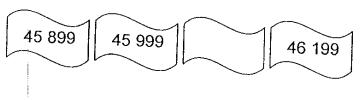
Section B: (30 marks)

Question 16 to 25 carry 1 mark each.

Write your answers in the space provided.

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

Study the number patterns carefully. What is the missing number? 16.



Answer:

17. Find the value of $\frac{4}{15} \times \frac{3}{8}$.

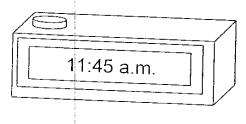
Answer:

What is $\frac{5}{8}$ of 6.4? 18.

Answer:

The actual time now is 12 noon. 19.

The clock shown below is _____ hour slower.

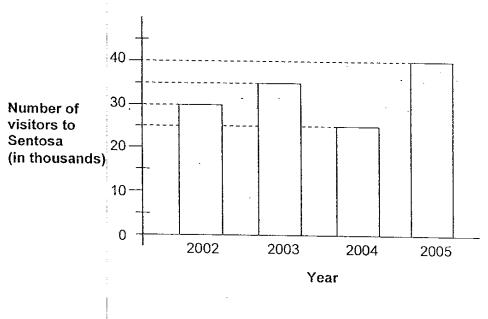


Answer: _____h

20. What is the volume of a cube of edge 7 cm?

Answer:	cm ³
	CHI

21. The bar graph shows the number of visitors to Sentosa from 2002 to 2005. How many visitors were there in 2004?

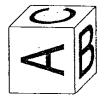


criontations of the same auto-

Answer:

22. The diagrams below show two different orientations of the same cube. The letters on the faces of the cube are A, B, C, D, E and F.





The letter that is opposite to the face of the cube that is marked B is

Answer:	

23.	Find the value of $5\frac{1}{10}$	-	2.09
	10		

Answer: ____

24. A machine makes 30 buns in 4 minutes.
At this rate, how many buns can the machine make in 14 minutes?

Answer: _____

25. Mrs Ong bakes 180 strawberry tarts and 220 blueberry tarts.

What is the ratio of the number of strawberry tarts to the total number of tarts in its simplest form?

Answer:

Question 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.

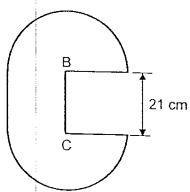
For questions which require units, give your answers in the units stated.

26. Two wooden blocks and two iron blocks weigh 94 kg.
Each iron block weighs 7 kg more than each wooden block.
What is the weight of each wooden block?

Answer: ____ ka

27. The figure is made up of one square and two similar semicircles.B and C is the centre of the circle respectively.

What is the perimeter of the figure? (Take $\pi = \frac{22}{7}$)



Answer: _____cm

28. Isabel is x years old. Her aunt is (x + 4) years older than her. Find her aunt's age in 3 years time.

Answer: _____years

29.	pupils are	∋ girls.
	How many percent more boys than girls	are there in the school?
0.0	: !	Answer: %
30.	Kristen participated in the Singapore Biati	nlon competition. She used
	$1\frac{1}{3}$ h to cycle 20km are 1 ran a distance of	10km at a speed of 15km/h
	What was her average speed for the whol	e journey?
		,
		Answer:km/h
31.	Find the value of 20p + 84 ÷ 3p when p=7.	
	op wien p-7.	
		Answer:
32.	Simplify the ratio $1.07 : 4\frac{7}{25}$	
	20	
		Answer:

29.

Petrol Station A offers a discount of 10% for its petrol.
Petrol Station B offers a \$2 discount for every \$25 of petrol.
Find the difference in the discounted price if Mr Cheng pumps \$100 of petrol at each station.

Answer: \$_____

34. Arrange these fractions in descending order: $\frac{1}{2}$, $\frac{7}{12}$, $\frac{4}{7}$.

Answer:

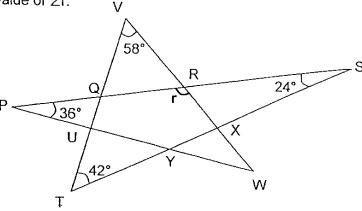
35. Find the value of $10 + (14 - 4) \times 64 \div 4 + 4$

Answer:

[End of Section B]

		,			
<u>.</u> .					
Nar	ne:		()	Class: P6
Sec	tion C: (50	I mortes			 -
For	questions	36 to 48 about	our working r	learly in the	
ine	number	tion and write you of marks available or part-question	o io ob	the spaces p	space provided rovided.] at the end of
		·			
36.	For ever	y handphone that	Brian sells, he	earns 5% of	the selling price
	- · · · · · · ·	r diac, he earns an	extra \$20 for e	Very 5 handal	20000 11
	Brian	sold / nandphon	es at \$200 ea	ach, how mu	ch did be som
	altogethe	r?		, - 11 1114	on did ne earn
	e e				
				Angua	
-				Answer:	[3]
37.	The ratio	of the base to the h	eight of a right	-200le trianala	io v. o
	The heigh	t of the right-angle	triangle is 24 c	m.	: IS y : 3.
	Find the a	rea of the right-ang	le triangle in te	rms of v	
			_	or y.	

38. In the figure below, PQRS, TUQV, WXRV, PUYW and TYXS are straight lines. Find the value of ∠r.



Answer: _____ [3]

39. Alvin, Brenda and Cecilia shared the cost of a watch for their father. $\frac{1}{4}$ of Alvin's share is equal to $\frac{1}{2}$ of Brenda's share.

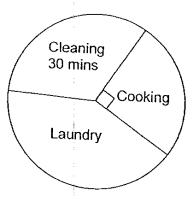
 $\frac{1}{2}$ of Brenda's share is equal to $\frac{2}{3}$ of Cecilia's.

If Alvin paid \$200 more than Cecilia, how much did the watch cost?

Answer: _____[3]

40. The pie chart shows how Mrs Lim distributes her time in doing the household chores daily.

If she spends 10 more minutes during the laundry than cooking, how many minutes does she spend on cooking?



Answer:	 [3]
u 13¥¥€1.	 [3]

41. Mrs Wong bought some guavas at \$0.65 each.

She also bought some starfruits at 5 for \$2.55.

She then packed 2 guavas and 3 starfruits into each packet.

If she could pack all the fruits into 15 such packets, how much did she pay for the fruits altogether?

Answer:[4]	Answer:		[4]
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42. A train needs to pass through two tunnels.

Travelling at 10 m/s, the entire train takes 45 seconds to completely pass through the first tunnel, which is 300 m long.

At the same speed, the train takes 38 seconds to completely pass through the second tunnel.

How long is the second tunnel?

Answer: _____[4]

43. A rectangular container has a base area of 750 cm². Sally poured some mango syrup into a rectangular container until it was $\frac{3}{8}$ full.

She then poured $11\frac{1}{4}$ / of water into the container until it was completely full.

What is height of the rectangular container?

Answer:		[4]
		1 7 7

Name: _____ () Class: P6 ___

44. Jack was given an end-of-year bonus.

First, he gave half of his bonus to his parents and \$40 to his niece.

Next, he donated $\frac{2}{3}$ of the remaining bonus to a charity.

Finally, he spent $\frac{1}{3}$ of his remaining bonus on some clothes and \$10 on

a bag.

If he was left with \$110, how much was his bonus?

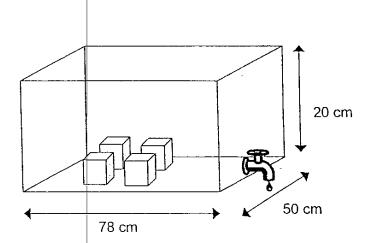
Answer: _____[4]

45. A rectangular tank with 4 solid metal cubes inside was filled with water to its brim.

When the tap was turned on, water flowed out of the tank at a rate of 1.8 litres per minute.

It took 39 minutes for the height of the water level to drop to the top of the solid metal cube.

Find the volume of <u>all</u> the metal cubes.



Answer:	[4]

46. Amy had a total of 204 red and blue beads in the ratio of 9:8.

After she gave away an equal number of each type of bead, the number of red and blue beads left was in the ratio 9:5.

How many beads did she give away altogether?

Answer: _____[4]

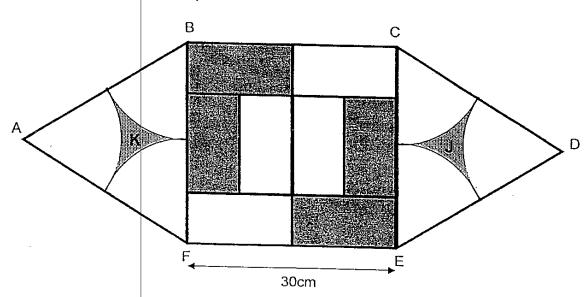
47. The figure below is not drawn to scale.

ABF and CDE are two identical equilateral triangles, each marked out with 3 similar segments.

BCEF is a square that is made up of 8 identical rectangles.

- (a) Find the total perimeter of the shaded portion of K and J.
- (b) Find the total unshaded area of the figure.

 $(Take | \pi = 3.14)$



Answer: a	ı)		[2]
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- 48. The ratio of the number of boys to the number of girls was 7 : 4.

 261 bookmarks were given to the children to be shared so that each boy received 3 bookmarks while each girl received 2 bookmarks.
 - a) How many boys were there?
 - b) $66\frac{2}{3}\%$ of the boys had decided to give $\frac{2}{3}$ of their bookmarks to $\frac{1}{9}$ of the girls to be shared out equally. What was the new number of bookmarks each of these girls have after receiving them from the boys?

Answer: a)	 [2]

Setters: Adeline Khalik Tan Ser Huay Tan Kim Kiam Cheng Kim Hong

[End of Section C]

Raffles Girls' Primary School

Primary 6 Maths Preliminary Exams (2006)

Answer Sheets

01	O2	03	04	Q5
4	3	2	3	2
Q6	Q7	Q8	Q9	Q10
3	2	3	2	3
Q11	Q12	Q13	Q14	Q15
2	3	3	2	4

16.	46099	21.	25000
	1		_
17.	10	22.	D
18.	4	23.	3.01
19.	0.25h	24.	105 buns
20.	343cm ³	25.	9:20

26.	(94 – 14)k	= 94kg = 14kg (Iron block) g = 80kg = <u>20kg</u> (Ans)	27.	$42 \times \frac{22}{7} = 132$ $= 132 + 21 + 21 + 21 + 21 + 21$ $= 216cm \text{ (Ans)}$
28.	Aunt = $x + 4 + x$ = $2x + 4$ = $2x + 4 + 3$ = $2x + 7$ (Ans)		29.	$2000 - 800 = 1200$ $1200 - 800 = 400$ $= \frac{400}{800} \times 100\%$ $= \underline{50\%} \text{ (Ans)}$
30.	Total distance = $20 + 10$ Time distance = $\frac{10}{15}$ = $1\frac{5}{15}$	hrs $\frac{10}{15}$ hrs	31.	$140 + 84 \div 21 = 144$
	Speed $= \frac{30}{2}$ $= 15k$	hrs <u>am/hours</u> (Ans)	32.	1.07 : 4.28 107 : 428 = 1 : 4 (Ans)

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33.	Petrol Station A = $\frac{10}{100}$ x 100 = \$10.00 Petrol Station B = 25 x 100 ÷ 25 = 4 4 x 2 = \$8.00 \$10.00 - \$8.00 = $\frac{$2.00}{(Ans)}$	34.	$\frac{42}{84}, \frac{49}{84}, \frac{48}{84}$ $= \frac{7}{12}, \frac{4}{7}, \frac{1}{2} \text{ (Ans)}$
35.	$10 + (14 - 4) \times 64 \div 4 + 4$ $10 + 10 \times 64 \div 4 + 4$ $10 + 160 + 4$ $= 174 \text{ (Ans)}$	36.	Earns = 5% = $\frac{5}{100}$ x 200 = 10 7 HP = 10 x 7 = 70 = 70 + 20 = 90 He earned \$90.00 (Ans)
37.	B: H y: 3 3 units = 24 1 unit = $24 \div 3 = 8$ y units = y x 8 = 8y Area = $\frac{1}{2}$ x 24 x 8y = 96y The area is $\frac{96}{2}$ (Ans)	38.	$\angle RXY = 180^{\circ} - 58^{\circ} - 42^{\circ} = 80^{\circ}$ $\angle RXS = 180^{\circ} - 80^{\circ} = 100^{\circ}$ $\angle SRX = 180^{\circ} - 100^{\circ} - 24^{\circ} = 56^{\circ}$ $\angle r = 180^{\circ} - 56^{\circ} = 124^{\circ}$ $\angle r = \underline{124^{\circ}} \text{ (Ans)}$
39.	$8-3=5$ 5 units = 200 1 unit = 200 ÷ 5 = 40 $8+4+3=15$ 15 units = 40 x 15 = 600 It costs \$\frac{\$600.00}{\$}\$ (Ans)	40.	$\frac{1}{2} = 30 + 10 = 40$ $\frac{1}{2} = \frac{2}{4}$ $\frac{2}{4} = 40$ $\frac{1}{4} = 40 \div 2 = 20$ She took 20 minutes (Ans)
41.	Guavas = 15 x 2 = 30 Starfruits = 15 x 3 = 45 Guavas = $\$(30 \times 0.65) = \19.50 $45 \div 5 = 9$ Starfruits = $\$(9 \times 2.55) = \22.95 Total = $\$(19.50 + 22.95) = \42.45 She spent $\$42.45$ (Ans)	42.	Distance = $10 \times 45 = 450$ 450-300 = 150 $38 \times 10 = 380$ $2^{\text{nd}} \text{ tunnel} = 380-150 = 230$ It is 230cm (Ans)

Page 2 of 4

43.	$11\frac{1}{4}\ell = \frac{45}{4}\ell$ $= 11.25\ell$ $= 11250cm^{3}$ $8-3=5$ $5 \text{ units} = 11250cm^{3}$ $1 \text{ unit} = 11250cm^{3} + 5 = 2250cm^{3}$ $8 \text{ units} = 2250cm^{3} \times 8 = 1800cm^{3}$ $\text{Height} = 18000cm^{3} + 750cm^{2} = 24cm$ $\text{It is } 24cm \text{ (Ans)}$	44.	2 units = $110 + 10 = 120$ 1 unit = $120 \div 2 = 60$ 18 units = $18 \times 60 = 1080$ Bonus = $1080 + 80 = 1160$ It was $\underline{\$1160.00}$ (Ans)
45.	Volume = 20 x 78 x 50 = 78000cm ³ 1.8l = 1800cm ³ Flow out = 1800cm ³ x 39 = 70200cm ³ Left = 78000cm ³ - 70200cm ³ = 7800cm ³ 78cm x 50cm = 3900cm ² Height = 7800cm ³ ÷ 3900cm ³ = 2cm Volume of 1 cube = 2 x 2 x 2 = 8cm ³ Volume of 4 cubes = 8 x 4 = 32cm ³ The volume is 32cm ³ (Ans)	46.	Before R:B 9:8 9:8 9:5 =18:16 =27:24 =36:32 36+32=68 68 units = 204 1 unit = 204 ÷ 68 = 3 = 36 - 9 = 27 27 units = 27 x 3 = 81 Given away = 81 x 2 = 162 She gave away 162 beads. (Ans)
47a.	3.14 x 30 = 94.2cm It is <u>94.2cm</u> 3.14 x 15 x 15 = 706.5cm ² 15 x 30 = 450cm ² 450 + 706.5 = 1156.5cm ² It is <u>1156.5cm²</u> (Ans)	48a.	No. of pupils Received B: G B: G 7: 4 21: 8 7 x 3 = 21 4 x 2 = 8 21 + 8 = 29 29 units = 261 1 unit = 261 ÷ 29 = 9 21 units = 21 x 9 = 189 Boys = 189 ÷ 3 = 63 There are 63 boys

48b. 7 units = 63
1 unit = 63 ÷ 7 = 9
Girls = 4 units
= 4 x 9 = 36
=
$$66\frac{2}{3}\%$$
 x 63
= $\frac{200}{3}$ x 63
= 4200

$$= \frac{4200}{100} = 42$$
Bookmarks (B) = 42 x 3 = 126
= $\frac{2}{3}$ x 126 = 84
= 36 x $\frac{1}{9}$ = 4
= 84 ÷ 4 = 21
Now (G) = 21 = 2 = 23
They now have 23 bookmarks. (Ans)