Anglo-Chinese School (Junior) / Anglo-Chinese School (Primary)

PRELIMINARY EXAMINATION 2012
MATHEMATICS
PAPER 1 (BOOKLET A)
PRIMARY SIX

Name:_____ ( ) Class: Primary 6 _____

Date: 23 August 2012 Duration of Booklet A & B: 50min

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 8 printed pages.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Shade your answer on the Optical Answer Sheet (OAS) provided.
5. You are not allowed to use a calculator.

Questions 1 to 10 carry 1 mark each. Question 11 to 15 carry 2 marks each. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS). (20 marks)

1. 5 hundreds, 7 tenths and 3 thousandths is _____.

   1) 570.003
   2) 500.703
   3) 500.370
   4) 500.073

2. Simplify $12k + 19 + (4k \times 6 \div 3) - 8$

   1) $12k - 19$
   2) $12k + 19$
   3) $16k + 3$
   4) $20k + 11$

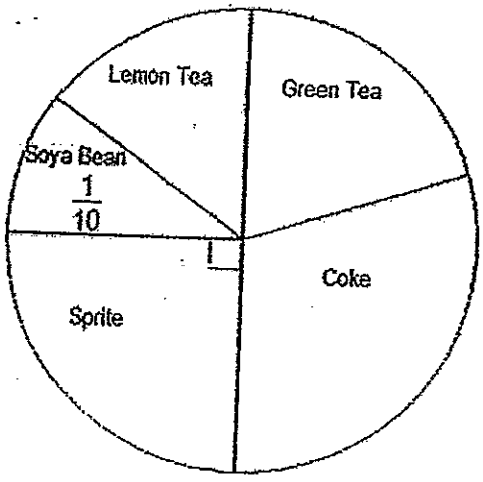
3. Which of the following sets of fractions is arranged in descending order?

   1) $\frac{1}{4}, \frac{3}{8}, \frac{5}{12}$
   2) $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}$
   3) $\frac{2}{5}, \frac{1}{10}, \frac{2}{3}$
   4) $\frac{3}{4}, \frac{2}{3}, \frac{1}{2}$

4. Which of the following fractions is exactly between $\frac{1}{2}$ and $\frac{1}{4}$?

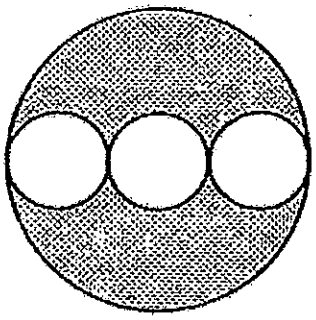
1) $\frac{1}{3}$
2) $\frac{3}{4}$
3) $\frac{3}{8}$
4) $\frac{1}{6}$

5. The pie chart below shows the number of cans of different types of drinks sold at a supermarket. Given that there are 40 cans of soya bean drink, find the number of cans of lemon tea at the supermarket.



1) 20
2) 60
3) 120
4) 240

6. The figure shown is made up of three identical small circles and a larger circle with radius 10cm. Find the ratio of the unshaded area to the shaded area. (Take $\pi = 3.14$)



1) 1 : 1
2) 1 : 2
3) 1 : 3
4) 1 : 4

7. Jason left his house at 10 45. He took a 20-minute bus ride to the cinema. He watched a movie for 1 h 30 min. Then, he walked 15 minutes to the library. At what time did Jason arrive at the library?

1) 12 30
2) 12 35
3) 12 45
4) 12 50

8. Mrs Tan bought a chocolate cake. She ate $\frac{1}{6}$ of it and gave the rest to her pupils. Each pupil received $\frac{1}{12}$ of the cake. How many pupils had Mrs Tan?

1) 8
2) 2
3) 10
4) 12

9. In the diagram below, the word ZONE is formed with 4 letters. How many of the 4 letters have exactly 1 line of symmetry?

Z O N E

1) 1
2) 2
3) 3
4) 4

10. A clock has a minute hand and an hour hand. At what time will these two hands form an angle of 150°?

1) 7 o'clock
2) 10 o'clock
3) 3 o'clock
4) 4 o'clock

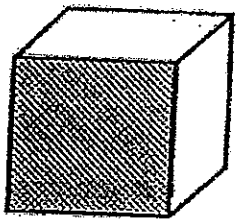
11. The average mass of Sumei and Leon is 49 kg. The average mass of Leon and John is 79 kg. Sumei is $\frac{1}{4}$ as heavy as John. Find Sumei's mass.

1) 10 kg
2) 12 kg
3) 20 kg
4) 40 kg

12. The ratio of Justin's salary to Allen's salary is 5 : 7. The ratio of Justin's salary to the total of Allen's and Keith's salary is 4 : 9. What is the ratio of Allen's salary to Keith's salary to Justin's salary?

1) 5 : 17 : 7
2) 7 : 17 : 5
3) 20 : 17 : 28
4) 28 : 17 : 20

13. If the shaded part of the cube shown is $64cm^2$, what is the volume of the cube?

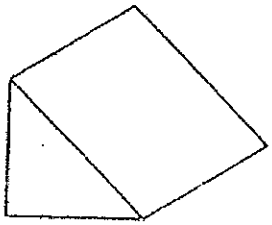


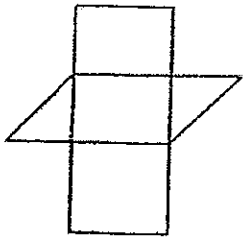
1) 192 cm^3
2) 384 cm^3
3) 512 cm^3
4) 4096 cm^3

14. Mrs Wu bought 3 kg of chicken and 8 kg of prawns for $105. 1 kg of prawns cost as much as 1.5 kg of chicken. Find the cost of 1 kg of chicken.

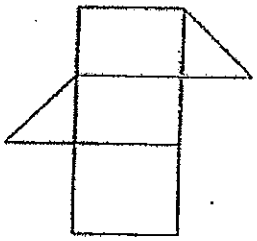
1) $7
2) $10.50
3) $12
4) $15

15. The figure on the right shows a prism. Which of the following is a net of the prism?

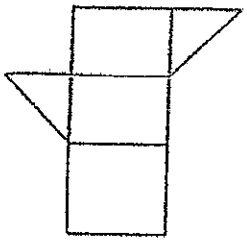




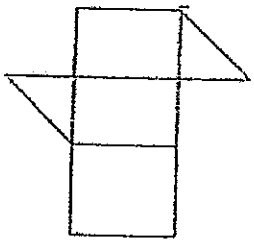
(1)



(2)



(3)



(4)

Anglo-Chinese School (Junior) / Anglo-Chinese School (Primary)

PRELIMINARY EXAMINATION 2012
MATHEMATICS
PAPER 1 (BOOKLET B)
PRIMARY SIX

Name: _____ Class: Primary 6 _____

Date: 23 August 2012 Duration of Paper Booklet A & B: 60 min

_____
Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 9 printed pages.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. You are not allowed to use a calculator.

Sections	Maximum Marks	Marks Obtained
Paper 1 Booklet A. Multiple-Choice Questions	20	
Paper 1 Booklet B. Short Answers: Part 1	10	
Paper 1 Booklet B. Short Answers: Part 2	10	
Total Marks	40	

Questions 16 to 25 carry 1 mark each. Write your answers in the spaces provided. Give your answers to the units stated and to its simplest form whenever necessary. (10 marks)

16. Mr Lee sold sugar in packs of w kg each at \$4.50. How many kilograms of sugar could Jamie buy with \$36 if he had to buy in packs of w kg?

Answer: _____ kg

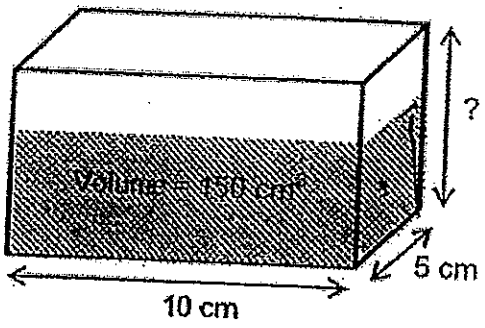
17. A photocopier can print 20 pages in 30 seconds. How long does it take to print 180 pages? Express your answer in minutes.

Answer: _____ minutes

18. Container X, Y and Z each contained 30 sweets. If 8 sweets were moved from X to Y, 6 sweets from Y to Z, and 10 sweets from Z to X, how many sweets were there in Container X after these movements?

Answer: _____

19. A container is filled with 150 cm^3 of water. If the height of water is $\frac{3}{4}$ that of the container, what is the height of the container?



Answer: _____ cm

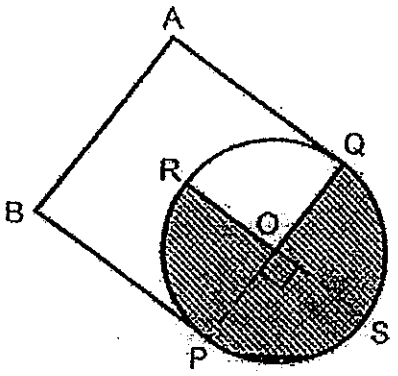
20. Alisha attended 2 periods of English lessons, 1 period of Mother Tongue lesson, 3 periods of Mathematics lessons and 2 periods of Science lessons. Each period is 35 minutes long. How much time did Alisha spend on all the four subjects' lessons?

Answer: _____ h _____ min

21. Rachel had a piece of ribbon measuring 3 m 4 cm long. She cut off 8.7 cm of the ribbon. Find the length of the remaining ribbon in cm.

Answer: _____ cm

22. From the figure, PQ and RS are 2 diameters which are perpendicular to each other. ABPQ is a square and OP = 14 cm. Taking $\pi = \frac{22}{7}$, find the unshaded area of the figure.

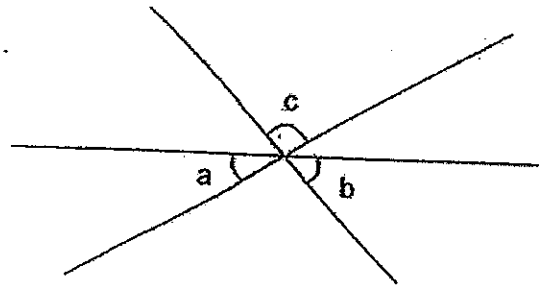


Answer: _____ cm^2

23. A container can either hold 160 books or 350 pocket-sized diaries. If there are already 112 books are packed in the container, what is the maximum number of pocket-sized diaries that can be packed into the container?

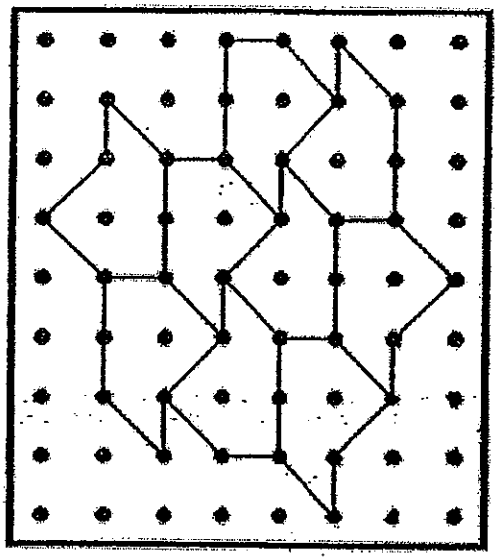
Answer:

24. The figure below consists of 3 straight lines. What is the value of $\angle a + \angle b + \angle c$?



Answer: _____ °

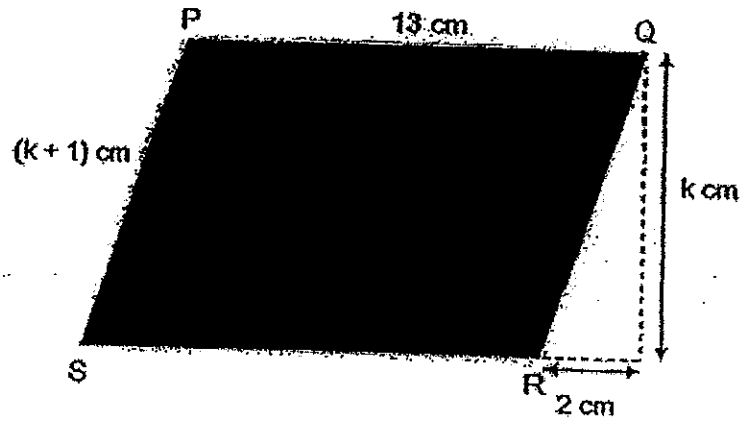
25. The pattern in the box below shows part of a tessellation. Extend the tessellation by drawing 1 more unit shape in the space provided in the box.



Questions 26 to 30 carry 2 marks each. Show all mathematical statements clearly in the space below each question and write your answers in the spaces provided. Give your answers to the units stated and to its simplest form whenever necessary.

(10 marks)

26. Find the area of the parallelogram PQRS in terms of k.

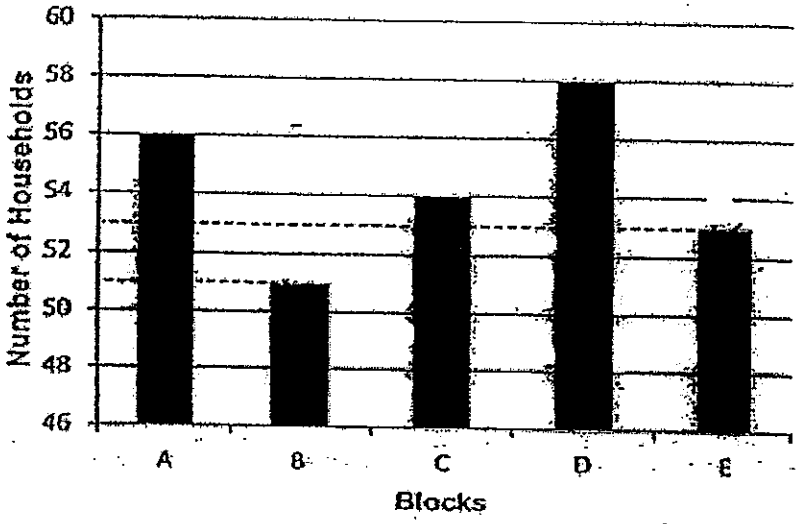


Answer: _____ cm^2

27. $\frac{3}{7}$ of X is equal to $\frac{2}{3}$ of Y. What is the ratio of Y to X?

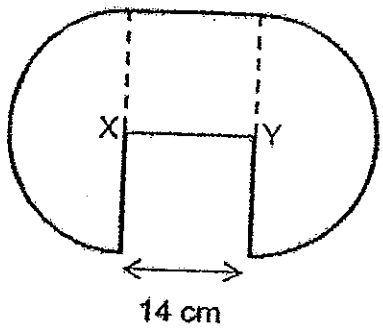
Answer: _____

28. The average number of households in a block of flats is 58. The bar graph shows the number of households which own a vehicle. How many households do not own a vehicle?



Answer: _____

29. A school field is made up of one square and two similar semicircles. X and Y are mid-points of the diameters. What is the perimeter of the figure? (Take $\pi = \frac{22}{7}$)



Answer: _____ cm

30. Peter spent $\frac{1}{5}$ of his money. If he had $84 left, how much money had he at first?

Answer: $ _____

Anglo-Chinese School (Junior) / Anglo-Chinese School (Primary)

PRELIMINARY EXAMINATION 2012
MATHEMATICS
PAPER 2
PRIMARY SIX

Name:_____ ( ) Class: Primary 6_____

Date: 23 August 2012

Duration of Paper 2: 1h 40min

_____
Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 14 printed pages.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. You are allowed to use a calculator.

Section	Maximum Marks	Marks Obtained
Paper 2 Section B. Short Answers: Part 2	10	
Paper 2 Section C. Problem Sums	50	
Total Marks	60	

Questions 1 to 5 carry 2 marks each. Show your mathematical statements clearly in the space provided for each question and write your answers in the spaces provided. Give your answers to the units stated and to its simplest form whenever necessary. (10 marks)

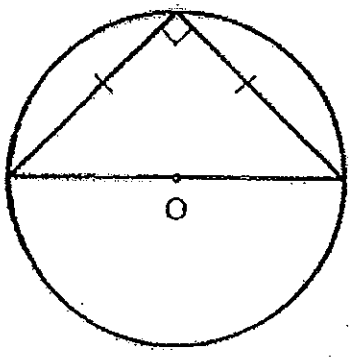
1. The average of five numbers, 7, 8, 15, 24 and 26, is 16. Which number should be removed in order to increase the average by 2?

Answer: _____

2. Every cube has 6 faces. 9 identical cubes have a total surface area of 2 646 cm^2. Find the volume of one cube.

Answer: _____

3. The figure below is made up of an isosceles triangle and a circle with centre O. The area of the isosceles triangle is 81 cm^2. Taking $\pi = 3.14$, find the circumference of the circle.



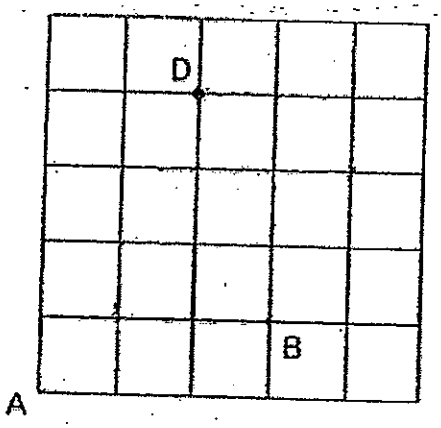
Answer: _____

4. $\frac{4}{9} \times 5 + \frac{1}{9} \times 5 = \square \times 5 - \frac{2}{9} \times 5.$

Find the missing fraction in the box.

Answer: _____

5. On the square grid below, complete the parallelogram ABCD by drawing three more lines. Label point C.



For questions 6 to 18, show your steps 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.
The number of marks available is shown in brackets [ ] at the end of each question or part-question. (50 marks)

6. Helen had twice as many stickers as Lisa at first. After Helen bought another 20 stickers and Lisa bought another 105 stickers, Lisa had three times as many stickers as Helen.

(a) How many stickers did Lisa have at first?

(b) Find the average number of stickers the two girls had in the end.

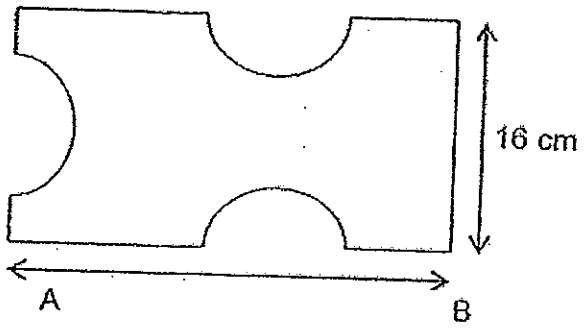
Answer: (a) _____ [1]

(b) _____ [2]

7. Lollipops are sold at 3 for $0.50. If Mrs Ang wants to buy all the lollipops, she will be short of $6. If she spends all her money to buy the lollipops, she can buy 85% of the lollipops. How many lollipops are there?

Answer: _____ [3]

8. A piece of a jigsaw puzzle has 3 identical semicircles cut out from a rectangular piece of cardboard as shown figure below. The perimeter of this piece of jigsaw is 84 cm and the diameter of each semicircle is 7 cm. Find the length of AB. (Take $\pi = \frac{22}{7}$)

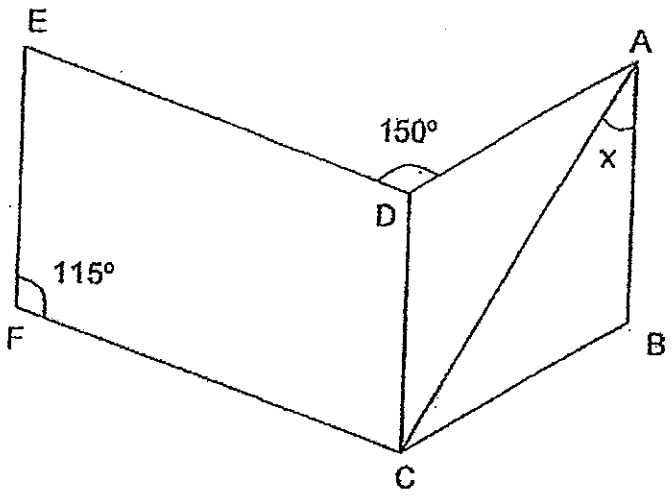


Answer: _____ [3]

9. At Mr Teo's fruit stall, $\frac{1}{5}$ of the fruits were apples. $\frac{5}{8}$ of the remainder were oranges and the rest were mangoes. Mr Teo sold $\frac{2}{3}$ of the mangoes and had 160 fruits left. How many mangoes did Mr Teo sell?

Answer: _____ [3]

10. In the figure below, ABCD is a rhombus and CDEF is a parallelogram. $\angle ADE$ is 150° and $\angle CFE$ is 115°. Find $\angle x$.



Answer: _____ [3]

11. Alvin, Ben and Carl had the same number of pens. Carl gave $\frac{1}{2}$ of his pens to Ben. Then Ben gave $\frac{1}{2}$ of his pens to Alvin. Finally, after Ben gave 26 pens to Carl, he had the same number of pens as Carl.

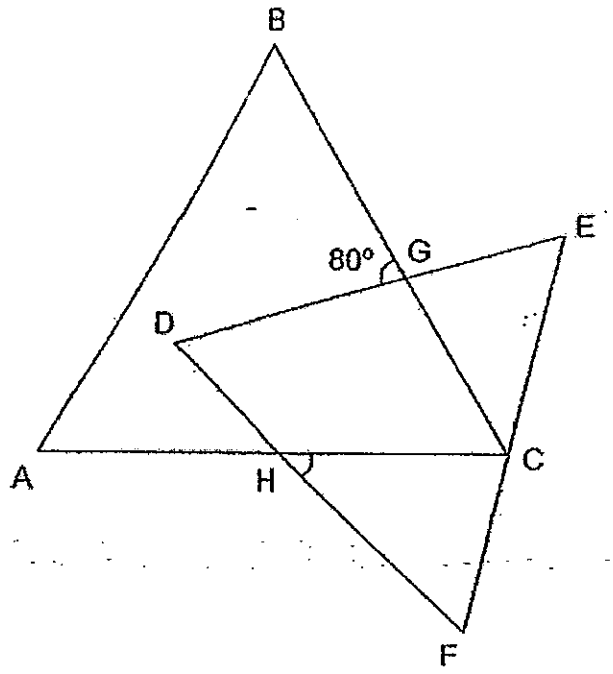
(a) How many pens did Carl have in the end?

(b) How many pens were there altogether at first?

Answer: (a) _____ [2]

(b) _____ [2]

12. In the diagram below, ABC and DEF are equilateral triangles.
∠BGD is 80°. Find ∠CHF.



Answer: _____ [4]

13. A factory operator is paid $6.75 to assemble an electronic cooker. The factory operator also receives an additional bonus of $5 for every 6 electronic cookers that he assembles. If the factory operator earned a total of $397.75, how many electronic cookers did he assemble?

Answer : _____ [4]

14. An empty tank has a base measures 50 cm by 80 cm. A tap that runs at 500 ml per minute took 320 minutes to fill the tank fully. How many litres of water must be removed so that the water level in the tank becomes 28 cm?

Answer: _____ [4]

15. Town Sinai and Town Malam were 375 km apart. Peter left Town Sinai for Town Malam at 10.00 a.m. travelling at an average speed of 75 km/h. Fredd left Town Sinai sometime later than Peter and overtook him at 12 noon. Fredd travelled at a speed of 90 km/h.

(a) At what time did Fredd leave Town Sinai?

(b) How much later did Peter arrive in Town Malam than Fredd?

Answer: (a) _____ [2]

(b) _____ [2]

16. The ratio of the amount of money Janan received to the amount of money Priscilla received was 2 : 9. The ratio of the amount money Priscilla received to the amount of money Simon received was 8 : 5. Then, Priscilla gave $\frac{1}{12}$ of her money to Janan, and Simon gave $\frac{1}{9}$ of his/her money to Janan. As a result, Janan had $378 in the end.

(a) What was the ratio of the amount of money Janan had to the amount of money Priscilla had in the end? (Give your answer in its simplest form.)

(b) What was the total amount of money the three children had?

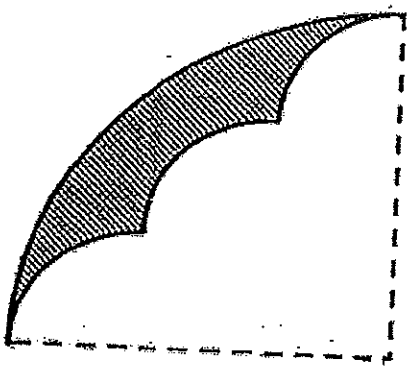
Answer: (a) _____ [2]

(b) _____ [3]

17. A boomerang as shown in the figure below is made up of 3 identical small quadrants and 1 big quadrant. The radius of each small quadrant is 2 cm and the radius of the big quadrant is 6cm. For each of the following, use the calculator value of π to find

(a) the perimeter of the shaded figure, correct to 1 decimal place,

(b) the area of the shaded figure, correct to 1 decimal place.



Answer: (a) _____ [2]

(b) _____ [3]

18. Wayne bought some dark chocolates and macadamia chocolates in a box. If 10 dark chocolates are removed from the box, the total number of chocolates left will be 6 times the number of dark chocolates left. If 30 macadamia chocolates are removed from the box, the total number of chocolates left will be 4 times the number of dark chocolates left. How many more macadamia chocolates than dark chocolates are there in the box?

Answer: _____ [5]

End of Paper 2

Answer Ke

EXAM PAPER 2012

SCHOOL : ACS
SUBJECT : PRIMARY 6 MATHEMATICS

TERM : SA2

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

16)8w

17)4½

18)30 – 8 = 22
22 = 10 = 32

19)10 x 5 = 50
150÷5= 3
3÷3 = 1
1 x 4 = 4cm

20)35 + 35 = 70min (EL)
35min (MT)
35min x 3 = 105min (Math)
35 + 35 = 70min (sci)
105 + 70 + 70 + 35 = 280
280 – 240 = 40
Ans: 4 h 40 min

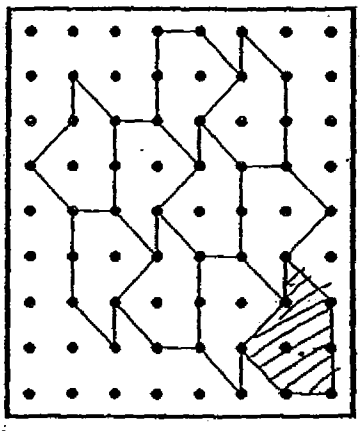
21)3m 4cm – 304cm
304 – 8 = 296
296 – 0.7cm = 295.3cm

22)Area of square→28 x 28 = 784
Area of quadrant
→¼ x 22/7 x 14 x 14 = 154
Area of unshaded part→784 - 154
= 630cm2

23) 160 B = 350 D
÷10 16 B = 35 D
x7 112 B = 245 D
350 – 245 = 105

24)180°

25)



!6)13K

!7)9 : 14

!8)56 + 51 + 54 + 58 + 53 = 272

!9)14 x 4 = 56
14 + 14 = 28
Perimeters of semicircle = ½ π
½ x 22/1 x 28 = 88/2
= 44
44 + 44 + 56 = 144cm

0)5u – 1u = 4u
4u = 84
1u = 21
21 x 5 = $105

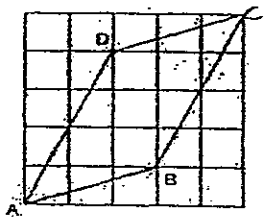
Paper 2

1) $16 + 2 = 18$ $18 \times 4 = 72$ $16 \times 5 = 80$ $80 - 72 = \underline{8}$

2) $2646 \div 9 = 294$ $294 \div 6 = 49$ $7 \times 7 = 49$ $7 \times 7 \times 7 = \underline{343}$

3) $\frac{1}{2} \times 9 \times 18 = 81$ $3.14 \times 18 = \underline{56.52}$

4) $\frac{7}{9}$

5) 

6a) $2u + 20 = 1p$ $1u + 105 = 3p$ $6u + 60 = 3p$ $6u + 60 = 1u + 105$
$105 - 60 = 45$ $6u - 1u = 5u$ $5u = 45$ Stickers at first $= 45 \div 5 = \underline{9}$

6b) H = 2u = 18 stickers L = 1u = 9 stickers $18 + 20 = 38$
$9 + 105 = 114$ $114 + 38 = 152$ Average stickers $= 152 \div 2 = \underline{76}$

7) $6 \div 0.5 = 12$ $12 \times 3 = 36$ $100\% - 15\% = 85\%$
$15\% = 36$ $1\% = 2.4$ Total lollipops $= 2.4 \times 100 = \underline{240}$

i) $\frac{3}{2} \times \frac{22}{7} \times 7 = 33$ $84 - 33 - 16 - 9 = 26$ $26 \div 2 = 13$

Length of AB $= 13 + 7 = \underline{20}$

) $8u = 160$ $1u = 160 \div 8 = 20$ Mangoes sold $= 2 \times 20 = \underline{40}$

)) $360 - 150 - 115 = 95$ $360 - 95 - 95 = 170$ $170 \div 2 = 85$
$\angle X = 85 \div 2 = \underline{42.5°}$

.a) $3u - 26 = 2u + 26$ $26 + 26 = 52$ $3u - 2u = 1u$ $1u = 52$
$2u = 2 \times 52 = 104$ Pens Carl have at end $= 104 + 26 = \underline{130}$
b) $130 \times 2 = 260$ $7u = 52 \times 7 = 364$
Pens altogether at first $= 364 + 260 = \underline{624}$

l $180 - 80 - 60 = 40$ $180 - 60 - 40 = 80$ $\angle CHF = 180 - 80 - 60 = \underline{40°}$

$6..75 \times 6 = 40.50$ $40.50 + 5 = 45.50$ $397.75 \div 45.5 = 8$
$8 \times 45.50 = 364$ $397.75 - 364 = 33.75$ $33.75 \div 6.75 = 5$
$8 \times 6 = 48$ Cookers assembled $= 48 + 5 = \underline{53}$

$50 \times 80 \times 28 = 112000$ $500 \times 320 = 160000$ $160000 - 112000 = 48000$
Litres of water that must be removed $= 48000ml = \underline{48litres}$

15a) $75 \times 2 = 150$ $\quad 150 \div 90 = 1\ \frac{1}{2}$ $\quad 1\frac{2}{3} \times 60 = 100$ mins

Time Fred left Town Sinai = 12noon - 100mins = **10:20am**

15b) $375 \div 90 = 40\ \frac{1}{6}$ $\quad F = 4\frac{1}{6} \times 60 = 250$ $\quad 250\text{min} = 4\text{hr } 10\text{mins}$

1hr 40min = 100min $\quad 250 - 100 = 150\text{min}$ $\quad 150\text{min} = 2\text{hr } 30\text{mins}$

P = 375 ÷ 75 = 5hrs $\quad 5\text{hr} - 2\text{hr} = 3\text{hr}$

How much later Peter arrived = 3hr - 2hr30min = **30minutes**

16) J : P : S

2 : 9

8 : 5

16:72:45

+5, -6, -5

27:66:40

16b) $27u = 378$

$1u = 14$

$27 + 66 + 40 = 133$

Total amount = $133u = 14 \times 133 =$ **$1862**

16a) J : P

27 : 66 = **9 : 22**

17a) $\frac{1}{4} \times \pi \times 12 = 3\pi$ $\quad \frac{1}{4} \times \pi \times 4 = 1\pi$ $\quad 3\pi + \pi + \pi + \pi = 6\pi$

Perimeter = $6\pi \approx$ **18.8cm**

17b) $\frac{1}{4} \times \pi \times 6 \times 6 = 9\pi$ $\quad \frac{1}{4} \times \pi \times 2 \times 2 = 1\pi$ $\quad 2 \times 2 = 4$ $\quad 4 \times 3 = 12$

Area = $9\pi - 3\pi - 12 \approx$ **6.8cm²**

18) $5u - 30 = 3p$

$5u - 30 = 3u + 30$

$2u = 60$

$30 + 10 = 40$

$1u + 10 = 1p$

$5u - 3u = 2u$

$1u = 30$

$3u + 30 = 3p$

$30 + 30 = 60$

$5u = 150$

More macadamia chocolates = 150 - 40 = **110**