Name : _____ ( )

Class : Primary 6 _____

Primary 6

2016 Preliminary Examination

Mathematics

Paper 1

Booklet A

23 August 2016

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.
The use of calculators is NOT allowed.

This booklet consists of 7 printed pages including the cover 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 correct oval (1, 2, 3, or 4) on the Optical Answer Sheet.

(20 marks)

---

1. 6 hundred thousands, 9 thousands and 4 tens is _____.

(1) 694 000

(2) 690 040

(3) 609 040

(4) 600 940

2. Which digit in 386.129 is in the hundredths place?

(1) 1

(2) 2

(3) 3

(4) 9

3. Mr Sim bought $\frac{5}{8}$ kg of charcoal. He used $\frac{2}{3}$ of it to barbecue some chicken wings. How much charcoal was left?

(1) $\frac{1}{24}$ kg

(2) $\frac{3}{5}$ kg

(3) $\frac{5}{12}$ kg

(4) $\frac{5}{24}$ kg

4. Which of the following is likely to be the height of the teacher's table in the classroom?

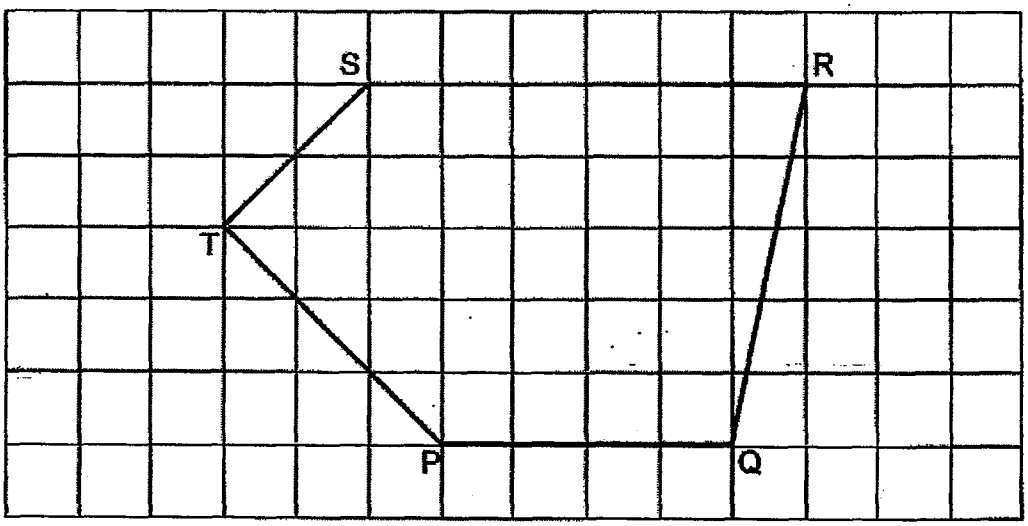
(1) 3 m

(2) 80 cm

(3) 100 m

(4) 150 cm

5. In the square grid below, which of the following pairs of lines are perpendicular to each other?



(1) PQ and QR

(2) PQ and SR

(3) ST and QR

(4) ST and TP

6. The table shows the number of stalks of carnations sold by a florist.

Day	Number of stalks of carnations sold
Monday to Friday	35 per day
Saturday	4 times the number of stalks sold on Friday

Find the total number of stalks of carnations sold from Monday to Saturday.

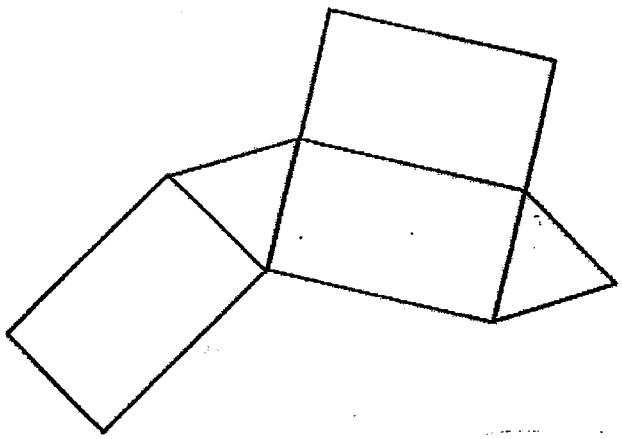
(1) 875

(2) 700

(3) 315

(4) 175

7. The figure below shows a net of a solid.



What is the name of the solid formed by the net above?

(1) cone

(2) prism

(3) cuboid

(4) pyramid

8. Lynn and Karen went shopping. On average, each girl spent $28. Karen spent $12 less than Lynn. How much did Karen spend?

(1) $16

(2) $22

(3) $34

(4) $44

9. Charlie and Daryl shared some stickers. Charlie had $\frac{2}{7}$ of the number of stickers Daryl had. What was the ratio of the total number of stickers the boys had to the number of stickers Charlie had to the number of stickers Daryl had?

(1) 9 : 2 : 7

(2) 9 : 7 : 2

(3) 7 : 2 : 5

(4) 7 : 5 : 2

10. Which one of the following fractions is closest to $\frac{1}{2}$?

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

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

(3) $\frac{5}{6}$

(4) $\frac{7}{10}$

11. Mdm Ong bought 225 g of chocolates. 40% of the chocolates were dark chocolates and the rest were milk chocolates. She gave away 45 g of the dark chocolates. What percentage of the chocolates are now dark chocolates?

(1) 20 %

(2) 25 %

(3) 50 %

(4) 80 %

12. Miss Tien had some lanterns in her classroom. She bought $5n$ new lanterns and added them to the lanterns she had. 2 new lanterns were torn and she was left with $18n$ lanterns. How many lanterns did she have in her classroom at first?

(1) $13n + 2$

(2) $13n - 2$

(3) $23n + 2$

(4) $23n - 2$

13. Jenny poured 20 ℓ of water into some pails. Each pail had a capacity of $\frac{6}{7}\ell$. She filled some pails completely except for 1 pail. How much water was in the pail that was not completely filled?

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

(2) $\frac{2}{7}$

(3) $6\frac{2}{3}$

(4) $17\frac{1}{7}$

14. The digit 6 on a scientific calculator is spoilt. Charlotte wanted to use the calculator to find the value of 76 x 19. Which of the following should Charlotte key in to give her the answer?

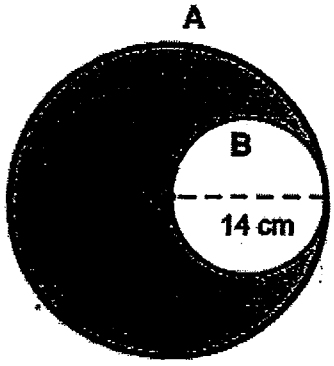
(1) 74 x 19 + 19

(2) 75 x 19 + 1

(3) 77 x 19 - 19

(4) 80 x 19 - 4

15. The figure below is made up of 2 circles, A and B. X is the centre of circle A. The diameter of circle B is 14 cm. Find the perimeter of the shaded part.
(Take $\pi = \frac{22}{7}$)



(1) 462 cm

(2) 132 cm

(3) 88 cm

(4) 44 cm

**** END OF BOOKLET A****

Name : _____ ( )

Class : Primary 6 _____

Primary 6

2016 Preliminary Examination

Mathematics

Paper 1

Booklet B

23 August 2016

Booklet A	20
Booklet B	20
Total (Paper 1)	40

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.
The use of calculators is **NOT** allowed.

This booklet consists of 10 printed pages including the cover 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)

Do not write in this space

16. Find the value of 10 000 - 706.

Ans : _____

17. Xi Ling was born on 1 June 1999. How old was she on 1 March 2006?

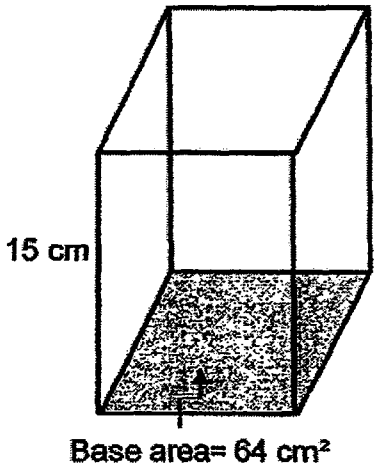
Ans : ___ years___months

18. Express 0.048 as a percentage.

Ans : _____

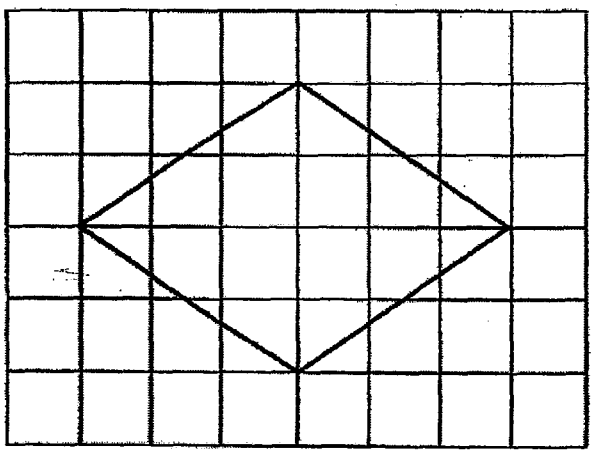
19. An open rectangular box is shown below. When the box is fully packed with 1-cm cubes, how many cubes are there?

Do not write in this space



Ans : _____

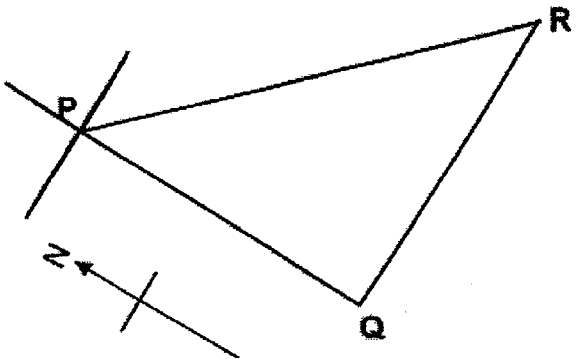
20. How many lines of symmetry are there in the figure below?



Ans : _____

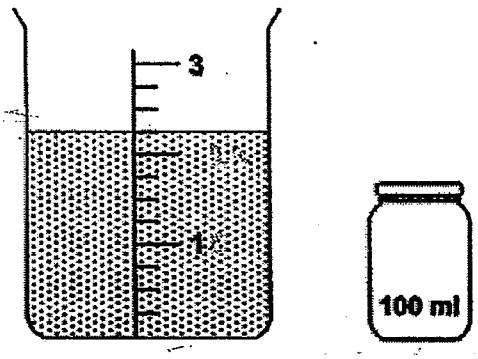
21. Point P is north of point Q. In which direction is Point R from Point P?

Do not write in this space



Ans : _____

22. The figure below shows a container filled with some water. Wali had some bottles with a capacity of 100 ml each. She poured out all the water in the container to fill the bottles completely. How many such bottles could she fill altogether?



Container Bottle

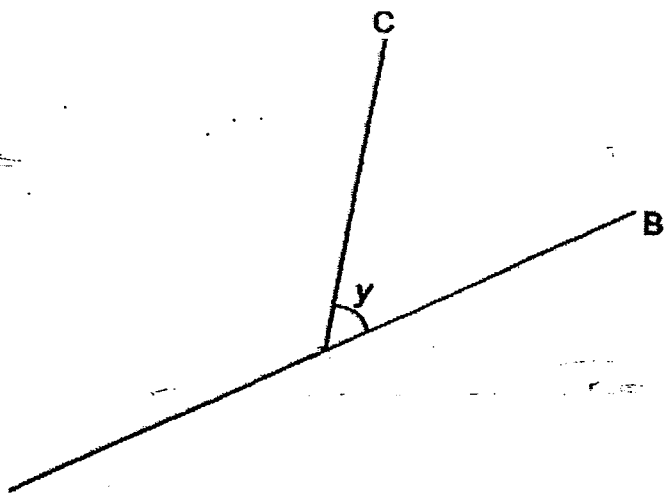
Ans : _____

Do not write in this space

23. Alvin was walking at an average speed of 70 m/min. At this speed, how long did he take to walk a distance of 910 m?

Ans : _____ min

24. The figure shows 2 straight lines, AB and AC. Draw 2 straight lines at Point A to form an angle which is equal to $\angle y$. Mark and label the angle as $\angle z$.



25. Adila mixed flour, sugar and butter in the ratio 5 : 2 : 3 to make some waffles. How much flour did she use for 3.5 kg of the mixture?

Do not write in this space

Ans : _____ g

Questions 26 to 30 carry 2 marks each. Show your working clearly 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 space

26. A table can seat 6 people as shown in Figure A. Following the pattern shown below, how many such tables are needed to seat 42 people?

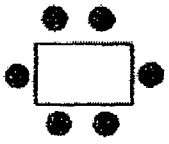


Figure A

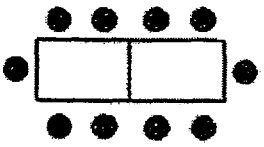


Figure B

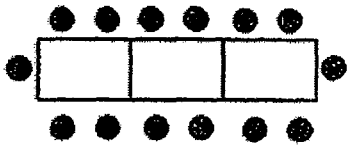
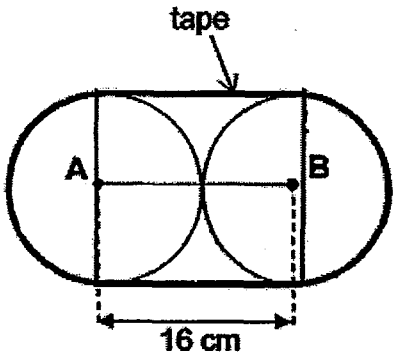


Figure C

Ans : _____

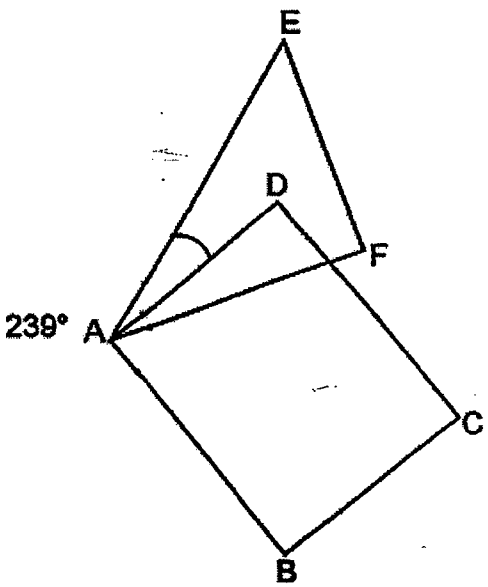
27. The figure below shows 2 identical circles enclosed by a tape. A and B are centres of the circles and the length AB is 16 cm. Find the length of the tape. Leave your answer in terms of π.

Do not write in this space



Ans : _____ cm

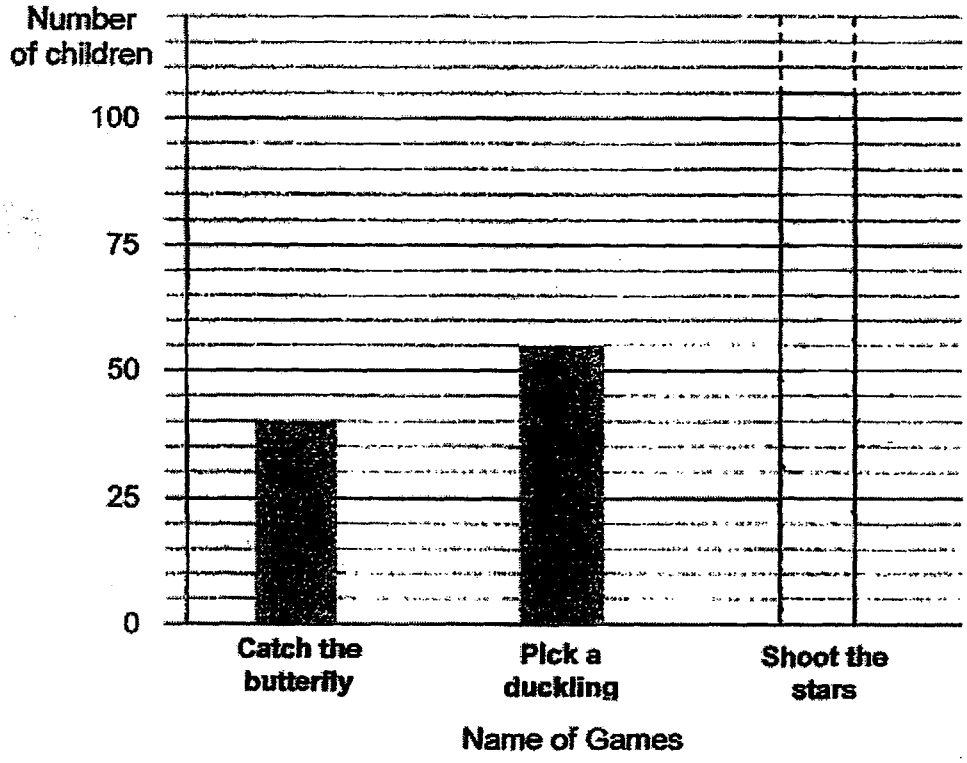
28. In the figure, ABCD is a rectangle and ∠EAB = 239°. Find ∠EAD.



Ans : _____ °

29. The graph below shows 3 different games played by children at a funfair.

Do not write in this space



Each child played only one game at the funfair. 80% of the total number of children played "Pick a duckling" and "Shoot the stars". Draw the bar that shows the number of children who played "Shoot the stars" in the graph.

30. Vincent and Willis spent some time completing a project. Vincent spent 30 minutes more than $\frac{2}{5}$ of the total time spent by both of them. Willis spent 1 hour. Find the total time spent by the boys in completing the project.

Ans : _____ h

END OF PAPER 1

Name : _____ ( )

Class : Primary 6 _____

Primary 6

2016 Preliminary Examination

Mathematics

Paper 2

23 August 2016

Paper 1	40
Paper 2	60
Total	100

_____

Parent's / Guardian's Signature

Time : 1 hour 40 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
The use of an approved calculator is expected, where appropriate.

This booklet consists of 15 printed pages including the cover page.

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

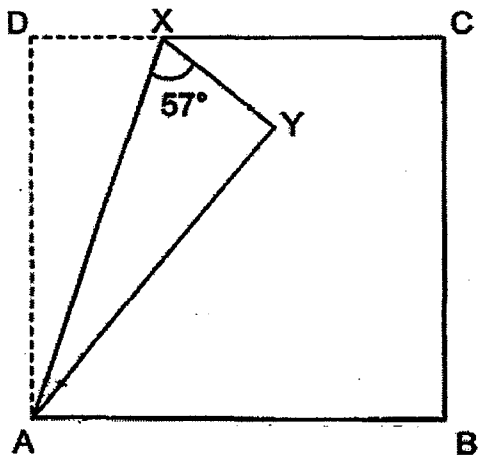
(10 marks)

Do not write in this space

1. Mrs Goh cut a ribbon into three smaller pieces. The first piece was $3w$ cm long and half as long as the second piece. The last piece was 8 cm shorter than the second piece. What is the length of the ribbon? Give your answer in terms of w.

Ans : _____ cm

2. The figure below is not drawn to scale. ABCD is a rectangular piece of paper. A corner of the paper was folded to form triangle AXY. Find $\angle YAB$.



Ans : _____ °

Do not write in this space

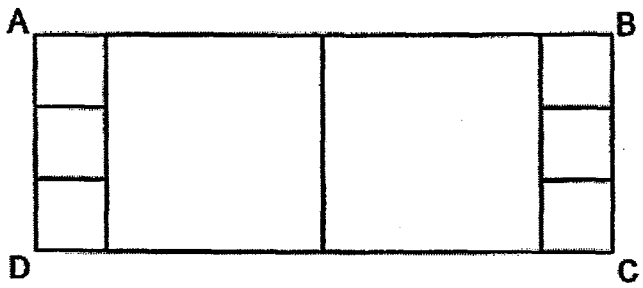
3. Three different coloured bulbs light up at regular intervals. The red bulb lit up once every 4 minutes. The blue bulb lit up once every 6 minutes. The yellow bulb lit up once every 9 minutes. After the 3 coloured bulbs light up together at 16 45, when would all the bulbs light up together next?

Ans : _____

4. Zi Hao took $\frac{1}{4}$ h to cycle from his home to his grandparents' house at a speed of 12 km/h. On his return trip, he took 10 min to cycle along the same route. What was Zi Hao's average cycling speed?

Ans : _____ km/h

5. The figure below shows a rectangle ABCD. It is made up of 2 similar big squares and 6 similar small squares. The area of each small square is 36 cm². Find the perimeter of the rectangle ABCD.



Ans : _____ cm

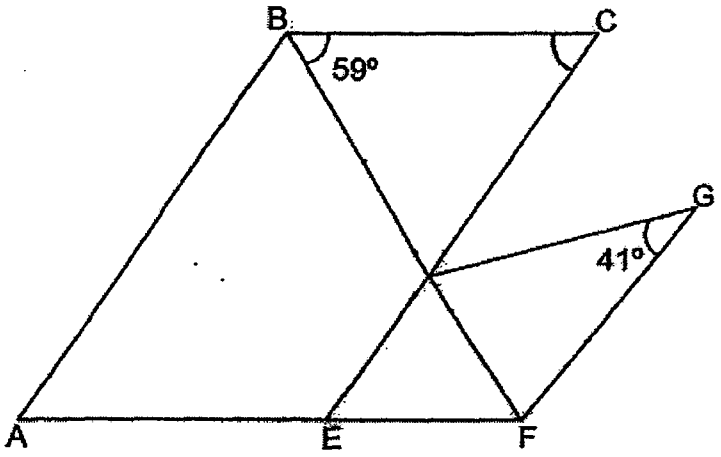
For questions 6 to 18, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part-question. (50 marks)

Do not write in this space

6. In the figure below, ABCE is a parallelogram and DEFG is a trapezium. BD = CD and EDC and BDF are straight lines. DE is parallel to GF.

(a) Find ∠AEC

(b) Find ∠FDG



Ans : a) _____ [1]

b) _____ [2]

7. Jacitha had just enough money to buy 48 similar files. During a sale, the price of each file was reduced by 20¢. She was able to buy 12 more files and had 60¢ left. Find the price of one file during the sale.

Do not write in this space

Ans : _____ [3]

8. Kim has a savings of $20.40 in her coin box. All the coins in the box were fifty-cent and twenty-cent coins. There were 3 times as many fifty-cent coins as twenty-cent coins. Find the number of twenty-cent coins in her coin box.

Ans : _____ [3]

3

Do not write in this space

9. The capacity of 5 big identical bottles is the same as the capacity of 9 small identical bottles. Each big bottle contains 0.3ℓ more water than each small bottle. Find the capacity of one big bottle.

Ans : _____ [3]

10. There were 523 red and blue chairs in the Drama Studio. Mr Ching brought in another 40 red chairs and took away 4% of the blue chairs. As a result, there were 547 chairs. How many red chairs were in the Drama Studio at first?

Ans : _____ [3]

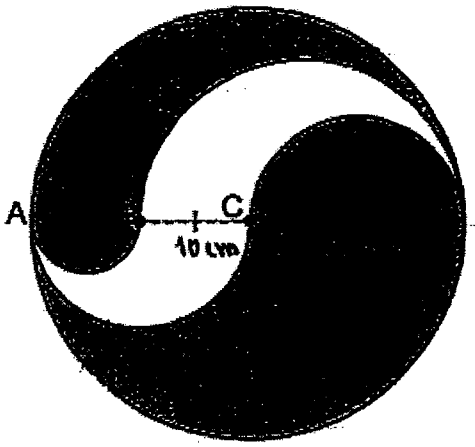
11. Rin had \$168 more than Sue. After Rin donated $\frac{1}{4}$ of her money and Sue spent $\frac{4}{5}$ of her money, they had \$734 left. How much money did Rin have at first?

Do not write in this space

Ans : _____ [4]

12. The figure is made up of a circle and 4 semicircles. C is the centre of the circle and its radius is 20 cm. AB = BC.
Find the area of the shaded part. (πr^2)
(Take π = 3.14)

Do not write in this space



Ans : _____ [4]

13. Jafar left Town G at 10 00 and drove to Town H at an average speed of 60 km/h. Half an hour later, Ivan left Town G and drove to Town H travelling along the same route as Jafar. He met Jafar at a petrol station at 13 00 before reaching Town H at 14 00. The petrol station was 10 km from Town H.

(a) Find the distance between Town G and Town H.

(b) Find the speed of Ivan. Give your answer correct to the nearest whole number.

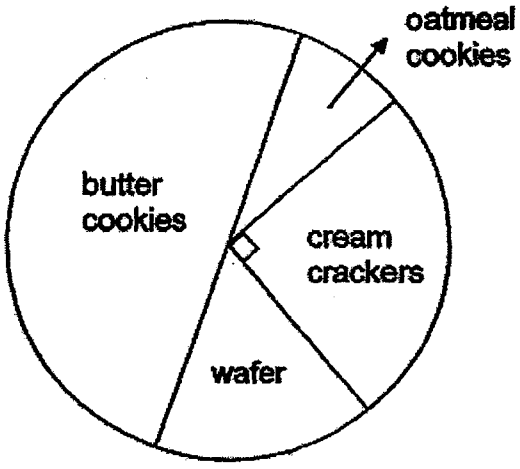
Do not write in this space

Ans : (a) _____ [2]

(b) _____ [2]

14. The pie chart below shows the different types of biscuits sold at a supermarket.

Do not write in this space



Half of the biscuits sold at the supermarket were butter cookies. The number of packets of wafer biscuits sold was $\frac{1}{3}$ of the number of packets of butter cookies sold.

a) What fraction of the biscuits sold were oatmeal cookies?

b) 1470 packets of butter cookies were sold. Find the total number of packets of wafer biscuits and oatmeal cookies sold.

Ans : (a) _____ [2]

(b) _____ [2]

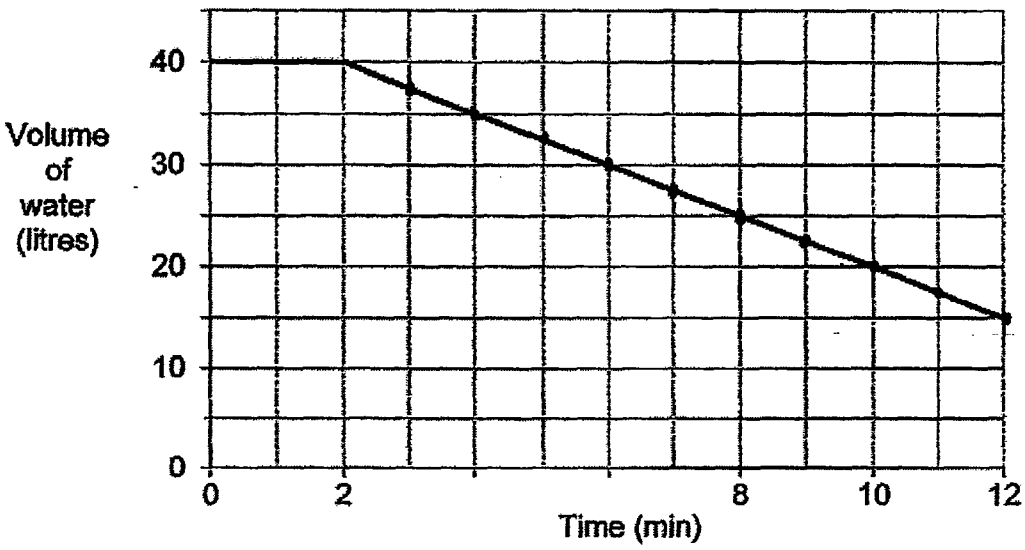
15. Shona had 40% more green beads than white beads. She bought 60% more green beads to make some necklaces. She used up 25% of the green beads. In the end, she had 340 more green beads than white beads. How many beads did Shona have in the end?

Do not write in this space

Ans : _____ [5]

16. A tank was $\frac{2}{3}$ filled with water at first. After 2 minutes, a tap was turned on to drain water from the tank. The graph below shows the amount of water in the tank over 12 minutes.

Do not write in this space



a) Find the capacity of the tank.

b) How many litres of water flowed out of the tank in one minute?

c) How many minutes would it take to drain all the water from the tank completely?

Ans : (a) _____ [1]

(b) _____ [2]

(c) _____ [2]

17. Mack had some goldfish and angelfish in 2 tanks. In Tank X, the number of goldfish was 3 times the number of angelfish. In Tank Y, the ratio of the number of goldfish to the number of angelfish was 2 : 5. Mack transferred 20% of the angelfish from Tank Y to Tank X. The number of fish in Tank Y became 168 and the ratio of the number of goldfish to the number of angelfish in Tank X became 5 : 4. How many fish were in Tank X in the end?

Do not write in this space

Ans : _____ [5]

18. Nigel and Osman have some game cards each. If Nigel gives Osman 49 game cards, he will have the same number of game cards as Osman. If Osman gives Nigel 23 game cards, Nigel will have 7 times as many game cards as Osman. How many games cards does Nigel have?

Do not write in this space

Ans : _____ [4]

**** END OF PAPER ****

ANSWER SHEET

EXAM PAPER 2016 (P6)

SCHOOL : CHIJ

SUBJECT : MATHEMATICS

TERM : SA1

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

16)9294 17)6 years 9 mth 18)4.8% 19)960 20)2

21)South – east 22)22 23)13 min 24)

25)3500 ÷ 10 = 350

350 x 5 = 1750 g

26)42 – 2 =40

40 ÷ 4 = 10 tables

27)Π x 16 = 16Π

16Π + 16 + 16

= (16Π + 32)

28)360° – 239° – 90° = 31°

29)1% →40 ÷20 = 2

80% →80 x 2 = 160

160 – 55 = 105

30)3u→1h + 30 min

= 1h + ½ h

=1½ h

1½ h ÷3 = 3/2÷3

= 3/2 x 1/3 = ½

5 units → ½ x 5 =2 ½ h

Paper 2

1) second piece
→3w x 2 = 6w
Last piece
→6w – 8 = (6w – 8)
3w + 6w +(6w – 8)
=(25w – 8)

2)180° – 90° – 57° = 33°
90° – 33° – 33° = 24°

3)1721

4)¼ h = 15 min

15 + 10 = 25

25/60 = 5/12

6÷5/12 = $14_{2/5}$ km/h

5) 36 = 6

6 x 3 = 18

6 x 10 = 60

18 x 4 = 72

= 60 + 72 = 132cm

6)a)180 – 59 – 59 = 62

180 – 59 = 121°

b)180 – 62 – 41 = 77°

7)48 x 0.20 = 9.60

9.60 – 0.60 = 9.00

9.00 ÷ 12 = $0.75

8)3 x 0.50 = 1.50

1x 0.20 = 0.20

1.50 + 0.20 = 1.70

20.40 ÷ 1.70 = 12

12 x 1 = 12

9)5u + 1500ml = 9u

9 – 5 = 4

4u → 1500

1u → 1500 ÷ 4 = 375

375 + 300 = 675ml

10)547 – 40 = 507

523 – 507 = 16

4% → 16

1% → 16 ÷ 4 = 4

100% → 4 x 100 = 400

523 – 400 = 123

11)¼ x 5 = 5/20

4/5 x 4 = 16/20

168 x ¼ = 42

20u – 5u = 15u

20u – 16u = 4u

15u + 4u = 19u

168 – 42 = 126

19 → 734 – 126

19u → 608

1u → 32

20u → 640

640 + 168 = $808

12) ½ x 3.14 x 10 x 10 = 157

½ x 3.14 x 5 x 5 = 39.25

½ x 3.14 x 15 x 15 = 353.25

3.14 x 20 x 20 = 1256

1256 – 353.25 + 39.25 = 942 cm_2

13)a)60 x 3 = 180

180 + 10 = 190km

b)190 ÷ 3½ ≈ 54 km/h

14)a)1 – 6/12 – 3/12 – 2/12 = 1/12

b)50% →1470

25% →1470 ÷ 2 = 735

15)G : W

7 : 5 x5

= 35 : 25

+21

= 56 : 25

-14

= 42 : 25

42 – 25 = 17

17u →340

1u →340 ÷ 17 = 20

67u →20 x 67 = 1340 beads

16)a)2u→40

1u →40 ÷ 2 = 20

3u →20 x 3 = 60L

b)40 – 15 = 25

25 ÷ 10 = 2½L

c)40 ÷ 2½ = 16 min

17)<u>Tank X</u>

G : A

= 3 : 1 x 5 = 15 :5

=5 : 4 x 3 = 15 : 12

<u>Tank Y</u>

G : A

= 2 : 5 x 7 = 14 : 35

= 2 : 4 x7 = 14 : 28

14 + 28 =42

42u →168

1u →168 ÷ 42 = 4

15 + 12 = 27

27u →4 x 27 = 108 fishes

18)6u →(49x2) + (23 x 2) = 144

1u →144 ÷ 6 = 24

24 + 144 = 168

168 – 23 = 145 game cards