Paper 1
Booklet A

ST. HILDA'S PRIMARY SCHOOL

PRELIMINARY EXAMINATION 2016

PRIMARY SIX

MATHEMATICS

PAPER 1

Booklet A: 15 Multiple-Choice Questions (20 marks)

(CALCULATORS ARE NOT ALLOWED)

Total Time for Booklets A and B : 50 min

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

Answer all the questions.

Name : _____

Index No.: _____ **Class :P6 /** _____ **Date:** 3 August 2016

Parent's Signature: _____

TOTAL NO. OF PAGES: 6 PRINTED PAGES AND 1 BLANK PAGE (EXCLUDING COVER PAGE)

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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 Which one of the following is the most likely area of a student EZLink card?

(1) 43 cm^2

(2) 43 m^2

(3) 430 cm^2

(4) 430 m^2

2 There are 237 486 spectators at a stadium.

Round off the number of spectators to the nearest thousand

(1) 200 000

(2) 237 000

(3) 238 000

(4) 240 000

3 Beth and Anna shared some stickers in the ratio 5 : 1.
Express the number of stickers Anna got as a fraction of the total number of stickers that they shared.

(1) $\frac{1}{6}$

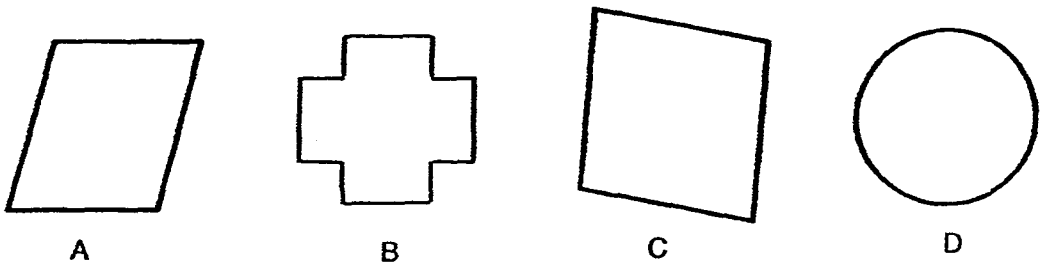
(2) $\frac{5}{6}$

(3) $\frac{1}{5}$

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

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4 Which figure/s has/have exactly four lines of symmetry?



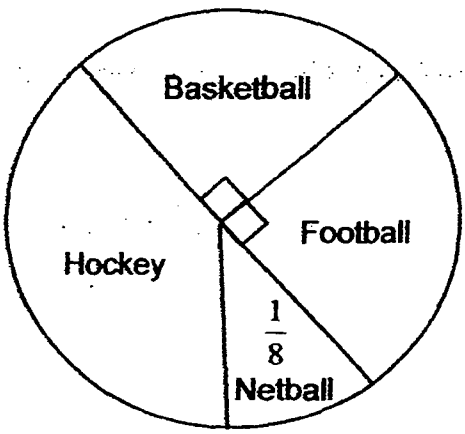
(1) B only

(2) B and C only

(3) A and D only

(4) A, C and D only

5 The pie chart shows the favourite sports of some pupils.
What fraction of the pupils like Hockey?



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

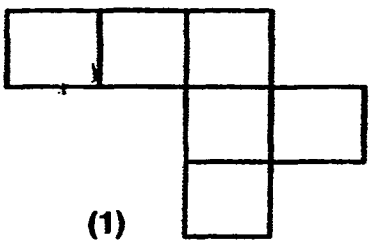
(2) $\frac{3}{8}$

(3) $\frac{5}{8}$

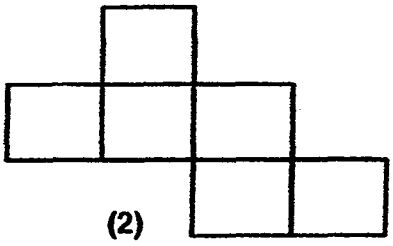
(4) $\frac{1}{2}$

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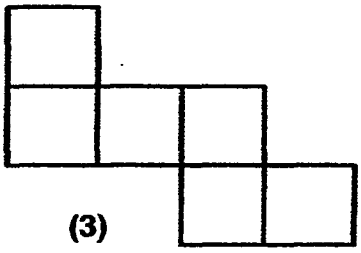
6 Which of the following is not the net of a cube?



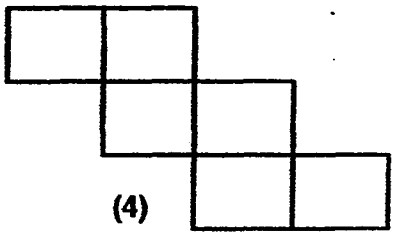
(1)



(2)

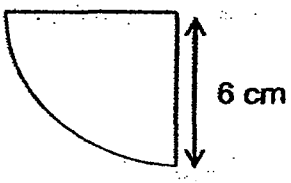


(3)



(4)

7 Express the perimeter of the quadrant below in terms of π.



(1) $(3\pi + 6)$ cm

(2) $(3\pi + 12)$ cm

(3) $(12\pi + 6)$ cm

(4) $(12\pi + 12)$ cm

8 Roy cycled 24 km in 40 min.
What was his cycling speed?

(1) 16 km/h

(2) 36 km/h

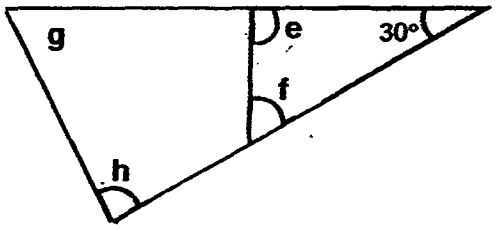
(3) 60 km/h

(4) 96 km/h

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9 The figure below is not drawn to scale.

Find the sum of ∠e, ∠f, ∠g and ∠h.



(1) 150°

(2) 180°

(3) 300°

(4) 360°

10 Liming and Sam have y marbles altogether.

Liming has 6 marbles more than Sam.

Find the number of marbles that Sam has in terms of y.

(1) $\frac{y-6}{2}$

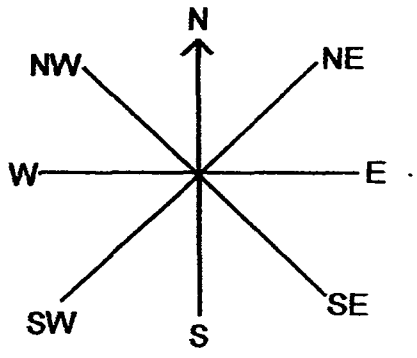
(2) $\frac{y+6}{2}$

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

(4) $\frac{y}{2} + 6$

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11 Study the eight point compass below.
If Ali makes a 135° clockwise turn, he will face West.
Where will Ali face if he makes a 270° anti-clockwise turn, from his original position?



(1) Northeast

(2) Northwest

(3) Southeast

(4) Southwest

12 The table below shows the bicycle rental charges at a park.

Duration	Charges
First hour or part thereof	$3
Subsequent half hour or part thereof	$2

Kenny rented a bicycle at 2.00 p.m.
After cycling, he returned the bicycle and paid $9.
At what time could he have returned his bicycle?

(1) 3.22 pm

(2) 3.58 pm

(3) 4.14 pm

(4) 4.38 pm

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13 The base of a rectangular tank measuring 40 cm by 60 cm is $\frac{1}{3}$ filled with water.

It needs another 24 ℓ to fill the tank.
Find the height of the tank.

(1) 5 cm

(2) 10 cm

(3) 15 cm

(4) 36 cm

14 June and Katie baked some tarts over 2 days.
On Monday, June baked 11 tarts more than Katie.
On Tuesday, June baked 10 tarts and Katie baked 3 tarts.
At the end of the 2 days, June baked $\frac{5}{7}$ of the total number of tarts.
Find the number of tarts Katie baked over the 2 days.

(1) 12

(2) 14

(3) 16

(4) 18

15 Study the table below.
In which column will the number 134 be?

Column A	Column B	Column C	Column D
		6	7
8	9	10	11
12	13	14	15
16	17...		

(1) Column A

(2) Column B

(3) Column C

(4) Column D

END OF BOOKLET A
Proceed to Booklet B

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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 Find the value of $7 \times 8 - (17 + 19) \div 4$.

Ans: _____

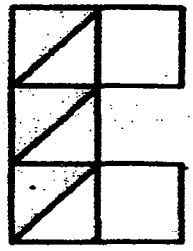
17 Find the value of $6050 \div 5$.

Ans: _____

18 The figure below is made up of 5 identical squares.

What fraction of the figure is shaded?

(Give your answer as a fraction in the simplest form)



Ans: _____

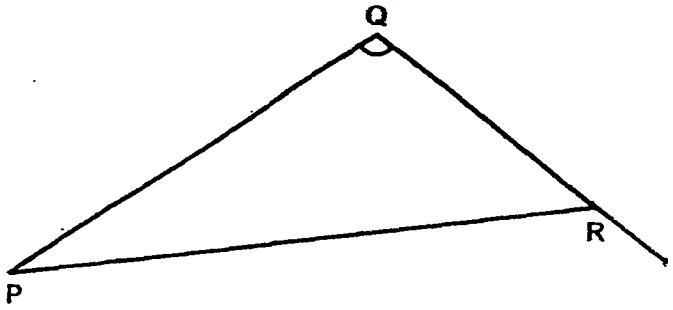
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19 Express $1\frac{3}{200}$ as a decimal.

Ans: _____

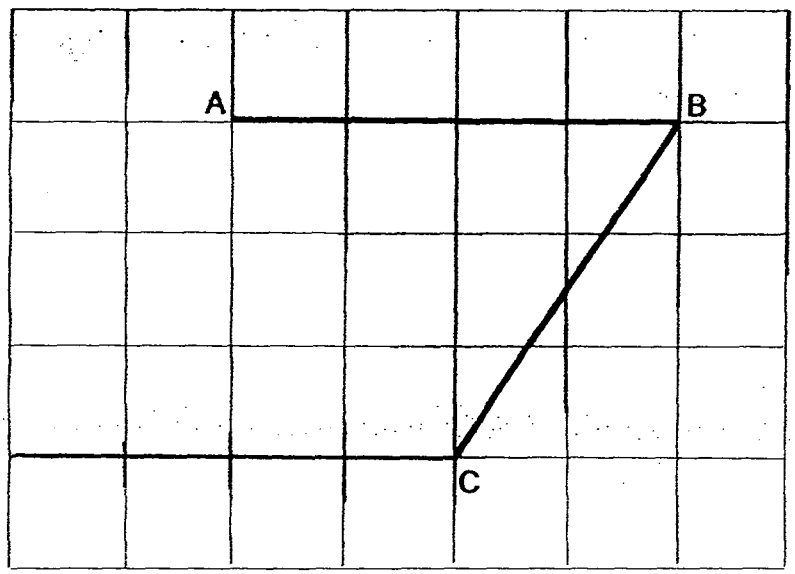
20 Measure and write down the size of ∠PQR.



Ans: _____ °

21 Construct a parallelogram ABCD in the grid below.

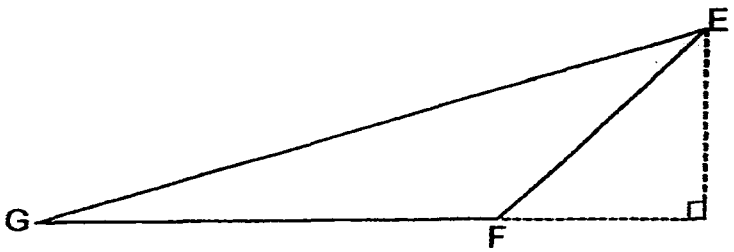
Draw 2 lines, CD and AD to complete the parallelogram.



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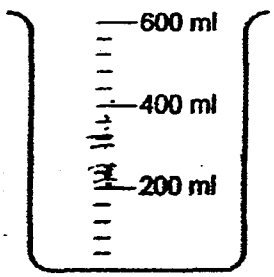
22 Measure and write down the height of triangle EFG.



Ans: _____ cm

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23 How many **litres** of water are there in the beaker below?



Ans: _____ ℓ

---

24 A solid cuboid of height 15 cm has a square base of 5 cm.
Find its volume.

Ans: _____ cm^3

---

25 Find the average of 4, p, 7 and 14 in terms of p.

Ans: _____

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Questions 26 to 30 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)

26 Paul had some money.

He used $\frac{1}{3}$ of it to buy a bag.

His father gave him $126.

In the end, Paul had 3 times as much money as he had at first.
How much money did he have at first?

Ans: _____

27 Mrs Sun knitted 2 scarves in 4 hours.

She took 40 minutes longer to knit the second scarf than the first one.

How long did she take to knit the first scarf?

Give your answer in hours and minutes.

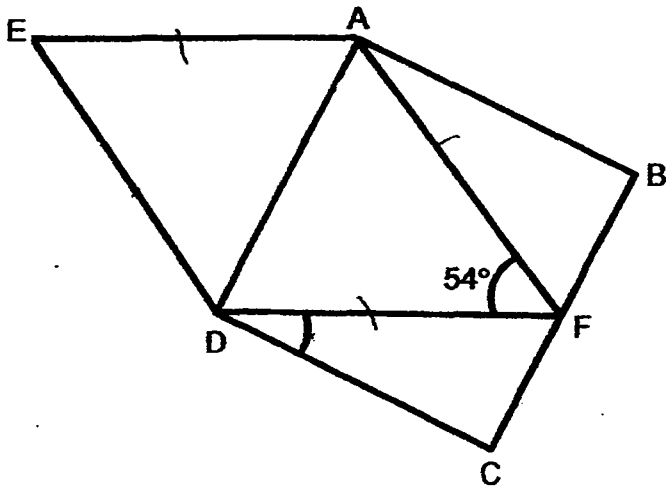
Ans: _____ h _____ min

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28 The figure below is not drawn to scale.

ABCD is a square and AEDF is a rhombus.
Find ∠FDC.



Ans: _____ °

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29 The table below shows the marks of 4 different subjects.

Subject	Marks
English	86
Mathematics	?
Science	84
Mother Tongue	70

The average mark for each subject is 82.5.

What is the mark for Mathematics?

Ans: _____

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30 The original price of a computer was $2000.
Anders was given a 30% discount off this price.
However, a 7% GST was imposed on the discounted price.
How much did Anders pay for the computer?

Ans: $ _____

END OF BOOKLET B

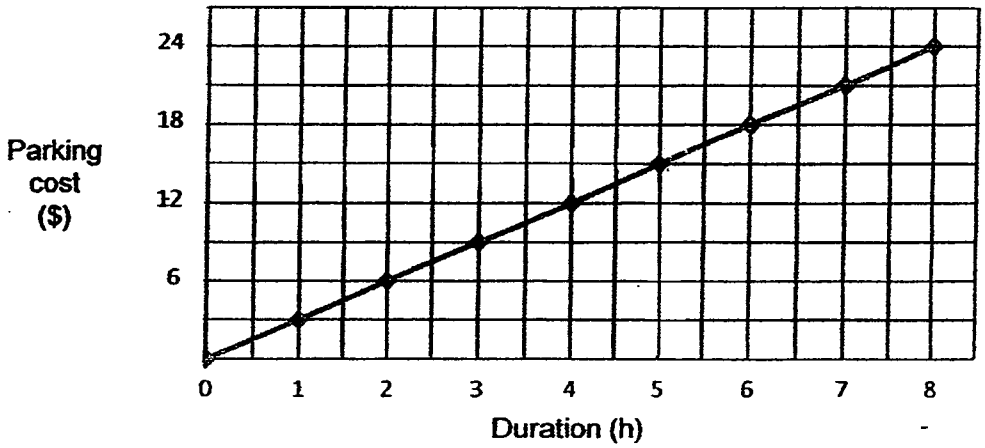
Have you checked your work carefully?

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Questions 1 to 5 carry 2 marks each. Show your working 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. (10 marks)

1 The line graph below shows the cost of parking a car in a certain shopping mall.
June parked her car at the shopping mall at 10 15 and left at 15 15.
How much did she pay for parking?



Ans: _____

2 Ishak uses shaded and white squares to form figures which follow a pattern.
The first three figures are shown below.
How many shaded squares will there be in Figure 10?

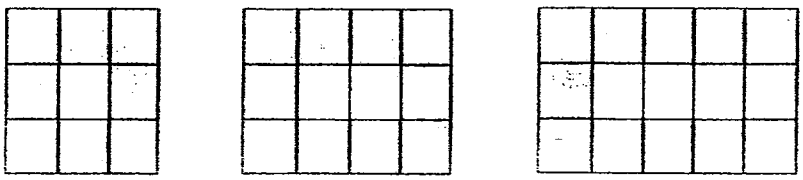


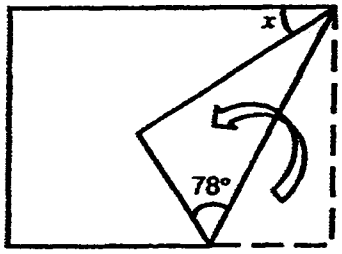
Figure 1 Figure 2 Figure 3

Ans: _____

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3 A rectangular piece of paper, not drawn to scale, is folded as shown below.

Find $\angle x$.



Ans: _____ °

4 The ratio of boys to girls at a party was 3 : 2

Half an hour later, some girls joined the party and the ratio of boys to girls became 3 : 8.

If there were 75 boys at the beginning, how many girls joined the party?

Ans: _____

5 Molly is 15e years old.

She is now 5 times as old as her son.

How old will her son be in 10 years' time?

Ans: _____

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For questions 6 to 18, show your working clearly in the space provided for each question 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)

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6 Gary kept 234 marbles in 2 containers, A and B.

After $\frac{2}{5}$ of the marbles in Container A were transferred to Container B, there were 24 more marbles in Container A than Container B.
How many marbles were there in Container B at first?

Ans: _____ **[3]**

7 The distance between 2 towns, A and B, is 108 km.
Mr. Lim and Mr. Tan left Town A at the same time and travelled towards Town B.

Mr. Tan arrived at Town B $\frac{3}{4}$ hour earlier than Mr. Lim.

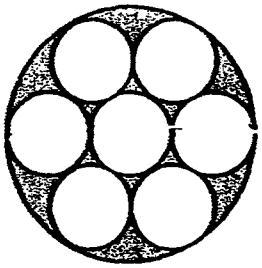
When Mr. Tan arrived at Town B, Mr. Lim was still 27 km away from Town B.
Find the average speed of Mr. Tan.

Ans: _____ **[3]**

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8 In the figure below, 7 small identical circles are drawn inside a big circle of radius 30 cm.

Take $\pi = 3.14$, find the area of the shaded region.



Ans: _____ [3]

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9 Minah went shopping with 20 pieces of $5 notes and some $10 notes.

The ratio of $5 notes to $10 notes was 2 : 7.

After spending an equal number of $5 and $10 notes the ratio of $5 notes to $10 notes became 3 : 13.

What was the total amount spent by Minah?

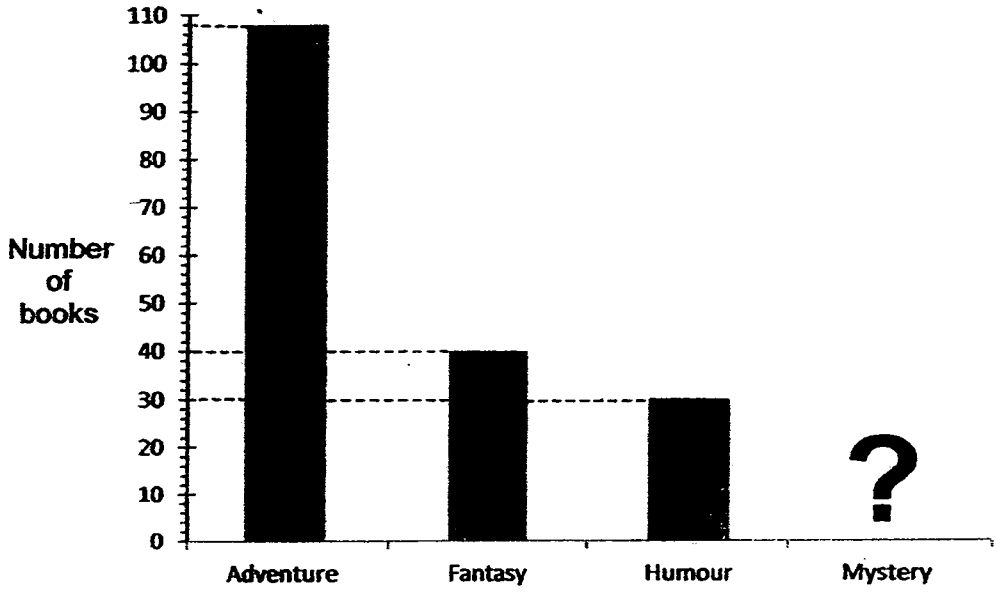
Ans: _____ [3]

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10 The bar graph below shows the number of books sold by a shop.

The number of mystery books was $\frac{2}{3}$ of the number of adventure books.



a) How many mystery books were there?

b) The table shows the prices of the books.

Type of book	Price per book
Adventure	$8.90
Fantasy	$8.00
Humour	$11.90
Mystery	$13.00

Which type of book did the shop collect the most money from the sale?

Ans: a) _____ [1]

b) Type: _____ [2]

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11 The figure below is not drawn to scale.

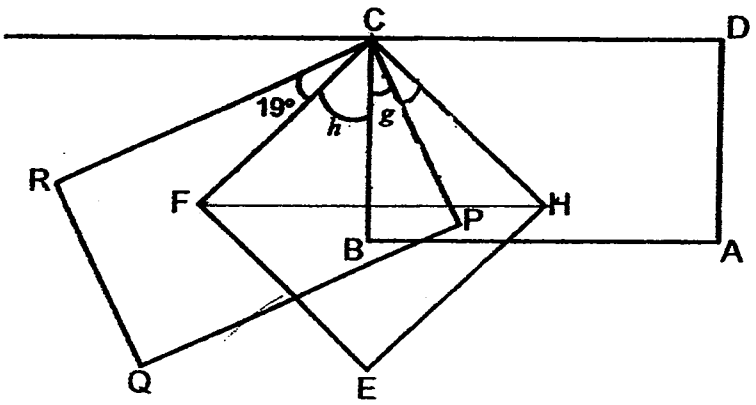
ABCD and PQRC are identical rectangles.

EFCH is a square.

If $\angle FCR$ is 19° and $\angle HCD = \angle BCH$, find

a) $\angle g$

b) $\angle h$



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Ans: a) _____ [3]

b) _____ [1]

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12 Pupils from Class A and Class B are raising money for needy students.
In the first week, Class A raised 4 times as much money as Class B.
In the second week, Class B raised another $417 and Class A raised another $252.
If Class A managed to raise twice as much money as Class B over the first 2 weeks, find the total amount raised by Class A over the first 2 weeks.

Ans: _____ [4]

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13 Jane and Kitty each had a piece of dough of the same mass for making cookies.

The same mass of dough was used for each cookie.

Jane made 25 cookies and had 1.35 kg of dough left.

Kitty made 47 cookies and had 470 g of dough left.

a) What was the mass of dough needed for each cookie?

b) With the remaining dough from both girls, how many more cookies can be made at most?

Ans: a) _____ [2]

b) _____ [2]

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14 The length of a rectangular tank is $2\frac{1}{2}$ times its breadth.

Its breadth is $\frac{1}{4}$ of its height.

It is $\frac{1}{5}$ filled with water and the height of the water level in the tank is 12 cm.

a) What is the capacity of the tank?

b) If water flows into the tank at 3 ℓ per minute, how long will it take to fill the remaining tank?

Ans: a) _____ [2]

b) _____ [2]

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15 Shop T sold a handphone for $425.
This price was 15% lower than the price which Shop M sold it for.

a) What was the price of the handphone in Shop M?

b) During a sale, both shops offered equal percentage discounts on the handphone.
Smith bought the handphone from Shop M.
He paid $57.75 more than the discounted price in Shop T.
What was the percentage discount?

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Ans: a) [1]

b) [3]

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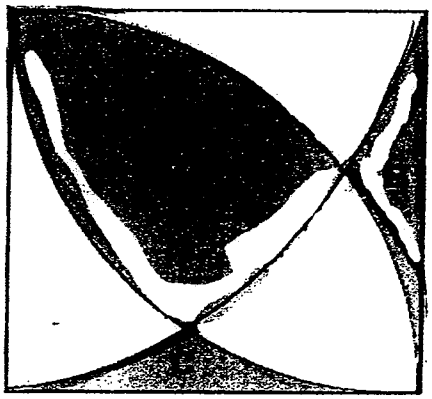
16 The figure below is made up of 3 identical quarter circles and a square of side 8 cm.

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a) Find the perimeter of the shaded areas.

b) Find the difference in the shaded area of A and the sum of the shaded areas of B and C.

(Take $\pi = 3.14$)



Ans: a) _____ **[2]**

b) _____ **[3]**

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17 Both David and Eric had an equal amount of money at first.
Every month, David spent $850 and Eric spent $912.
After a few months, David was left with $1550 while Eric had $\frac{4}{5}$ of the money David had left.
How much did Eric have at first?

Do not write in this space

Ans: _____ [5]

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18 Ricky bought some pens at the prices shown below.

Do not write in this space

Blue Pens	Red Pens
	
4 for $6.80	3 for $2

a) He bought an equal number of blue and red pens.
He paid $99.20 more for the blue pens than for the red pens.
How many pens did he buy altogether?

b) Heidi spent an equal amount of money on the blue and red pens.
What fraction of the pens she bought were red pens?
(Give your answer as a fraction in the simplest form.)

Ans: a) _____ [3]

b) _____ [2]

END OF PAPER TWO

Have you checked your work carefully?

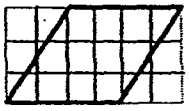
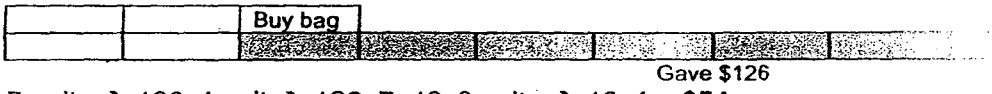
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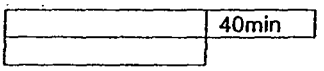
St. Hilda's Primary School
Preliminary Examination 2016 Primary 6 Mathematics

Paper 1 Booklet A

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

Paper 1 Booklet B

16 7 x 8 - (36) ÷ 4 = 56 – 9 = **47**
17 **1210**
18 **3/10**
19 3/200 = 1.5/100 = 0.015; 1 + 0.015 = **1.015**
20 **107°**
21 
22 **2.6 cm**
23 5 units → 200ml; 1 unit → 40ml; 2 units → 80ml; 200+80ml = **0.280L**
24 5 x 5 x 15 = **375 cm^3**
25 (4 + p + 7 +14) / 4 = **(25 + p) / 4**
26 

7 units → 126; 1 unit → 126÷7=18; 3 units → 18x4 = **$54**
27 

2 scarves in 4h = 4x60 = 240 min; 2 units → 240 – 40 = 200 min;
1 unit → 100min = **1 h 40 min** (scarf 1)
28 Angle ACF → (180° - 54°) /2 = 63°; Angle FDC = 90° - 63° = **27°**
29 total score = 82.5 x 4 = 330; Mathematics Marks = 330 – 70 – 84 – 86 = 90
30 100% → 2000; 70% → 1400; 107% → 1400 x 107 = **$1498**

Paper 2

1 **$15**
2 **26 shaded squares**
3 **66°**
4 **150 girls**
5 **3e+10 years old**
6 **19**
7 **48km/h**
8 **628 cm^2**
9 **$75**
10 a) **72** b) Type: **Adventure**
11 a) Angle g = **26°** b) Angle h = **45°**
12 **$1416**
13 a) **0.04kg** b) **45** more cookies

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14 a) L:B:H = 5:2:8; 1/5 H → 12; 1 H → 12 x 5 = 60; 8 units → 60; 1 unit → 7.5; B → 7.5 x 2 =15; L → 7.5 x 5 = 37.5; Capacity = 60 x 15 x 37.5 = **33750ml**

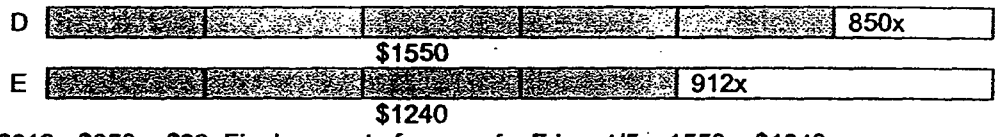
b) 4/5 x 33750 = 27000ml = 27L; time taken = 27/3 = 9 minutes

15 a) 100% → (425/85)x100 = **$500**

b) 15% → 57.75; 1% → 57.75 / 15 = 3.85; 100% → 3.85 x 100 = 385
385/500 x 100% = 77%; Percentage discount = 100% - 77% = **23%**

16 a) **53.68 cm** b) **22.72cm²**

17



$912 - $850 = $62; Final amount of money for Eric = 4/5 x 1550 = $1240;
x → (1550 -1240) / 62 = 5; Amount Eric had at first = (5x912) + 1240 = **$5800**

18 a) for equal number of pens, lowest common multiple is 12; diff. in price of 1 set → (3x$6.80) – (4x$2) = $12.40; sets bought → 99.20÷12.40 = 8; thus pens bought = (8x12) + (8x12) = **192 pens**

b) 6.80x10 = 68; 68÷2 = 34; no. red pens =34x3=102; no. blue pens =10x4=40;
Fraction of red pens bought = 102 / (102+40) = **51/71**

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