ST. HILDA'S PRIMARY SCHOOL
PRELIMINARY EXAMINATIONS, 2012
MATHEMATICS
PRIMARY SIX
PAPER ONE
BOOKLET A

Name: _____ ( )

Class: P6 / _____ **Marks:** _____ / 20

Date: 3 August 2012 **Parent's Signature:** _____

Time for Booklets A and B: 50 minutes

You are not allowed to use a calculator.

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 Round off 7 586 509 to the nearest ten thousand.

(1) 7 586 510
(2) 7 587 000
(3) 7 590 000
(4) 7 600 000

2 What is 20 hundreds, 15 tenths and 80 thousandths?

(1) 82 150.0
(2) 82 001.5
(3) 2 001.58
(4) 2 000.23

3 Which one of the following fractions is the **largest**?

(1) $\frac{1}{3}$
(2) $\frac{1}{7}$
(3) $\frac{1}{8}$
(4) $\frac{1}{11}$

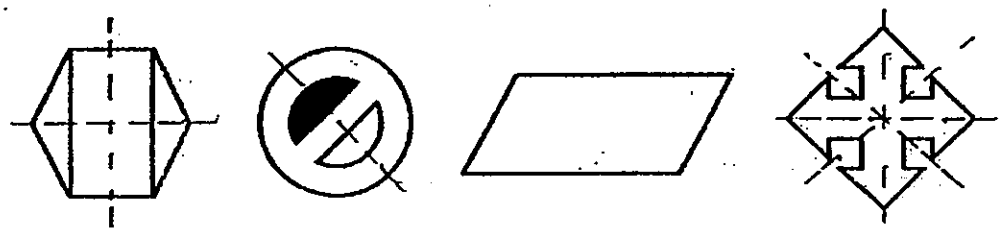
4 What is the value of $60 - 8 + (9 + 3) \times 2 \div 4$?

(1) 76
(2) 58
(3) 46
(4) 19

5 Which one of the following is the same as 7 040 m?

1) 7 km 4 m
2) 7 km 40 m
3) 7 km 400 m
4) 70 km 40 m

6 Which one of the following shapes below has exactly 2 lines of symmetry?



A B C D

1) (1) A
2) (2) B
3) (3) C
(4) D

7 Jolene and Marie had 60 books.
Jolene had 24 books.
Find the ratio of the number of books Marie had to the number of books Jolene had.
Express your answer in its simplest form.

(1) 2 : 3
(2) 2 : 5
(3) 3 : 2
(4) 5 : 2

8 Mrs Rama had 7 packets of sweets.
There were n sweets in each packet.
She distributed the sweets equally among her 4 children and had 3 sweets left.
How many sweets did each child get?

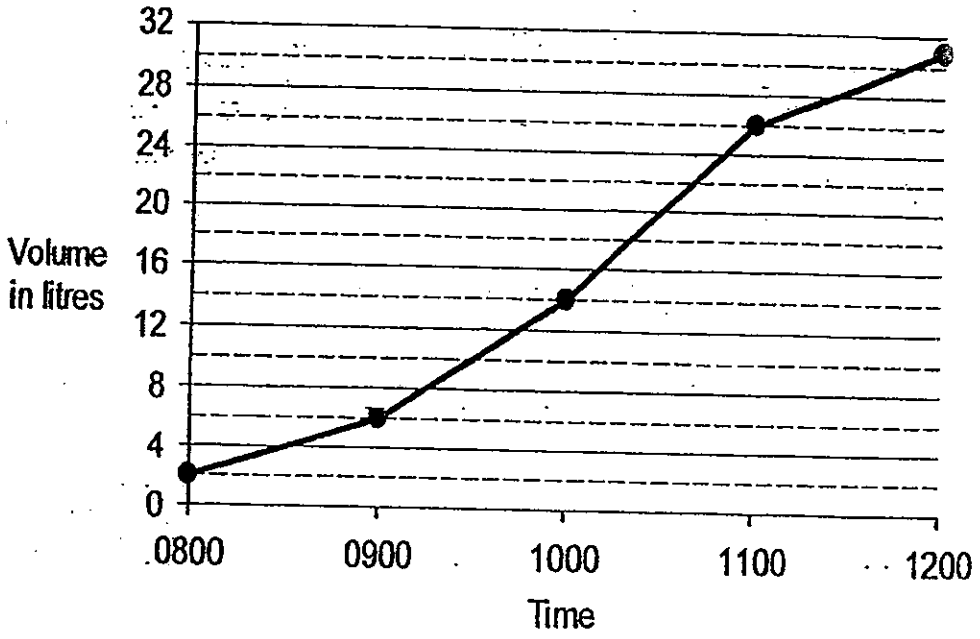
(1) $\frac{7n}{4} + 3$

(2) $\frac{7n}{4} - 3$

(3) $\frac{7n+3}{4}$

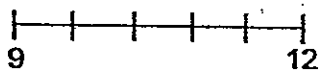
(4) $\frac{7n-3}{4}$

9 A tank was partially filled with water.
It was gradually filled with water from 0800.
Water was poured into the tank from 0800 to 1200.
The line graph shows the amount of water in the tank from 0800 to 1200.
During which period was the increase in the volume of water the greatest?



(1) 0800 to 0900
(2) 0900 to 1000
(3) 1000 to 1100
(4) 1100 to 1200

10 The figure below shows a number line.
What is the value indicated by the arrow?



(1) $9\frac{4}{5}$

(2) $9\frac{5}{6}$

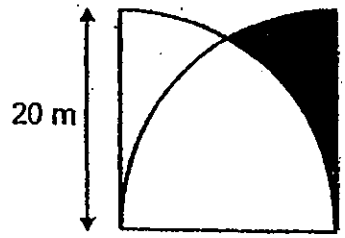
(3) $10\frac{1}{2}$

(4) $11\frac{2}{5}$

11 Jack left school when his watch showed 7.35 a.m.
His watch was 10 minutes slow.
He took 50 minutes to travel to school.
When he arrived, he found that he was 10 minutes early for class.
What time was his class supposed to start?

(1) 8.05 a.m.
(2) 8.25 a.m.
(3) 8.45 a.m.
(4) 9.00 a.m.

12 The figure below shows two identical quadrants.
Find the perimeter of the shaded part.
Leave your answer in π.



(1) $(40\pi + 40)$ m
(2) $(20\pi + 20)$ m
(3) $(10\pi + 20)$ m
(4) $(5\pi + 40)$ m

13 The total mass of boxes X and Y is 30 kg.
The total mass of boxes Y and Z is 66 kg.
Box Z is 4 times as heavy as Box X.
Find the average mass of the 3 boxes.

1) 16 kg
2) 26 kg
3) 32 kg
4) 48 kg

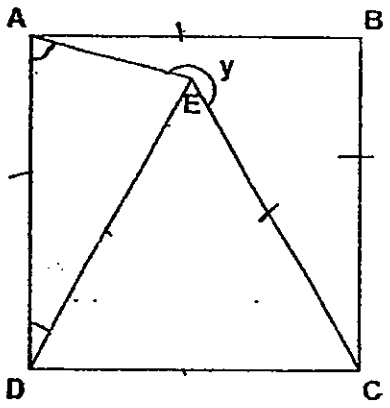
14 The following pattern is formed using 4 letters, A, B, C and D.

A B C D A A B B C C D D A A A B B B C C C D D D ... ?
1st 24th 160th

What is the 160th letter?

(1) A
(2) B
(3) C
(4) D

15 In the figure below, not drawn to scale, ABCD is a square.
CDE is an equilateral triangle.
Find ∠ y.



(1) 225°
(2) 210°
(3) 195°
(4) 135°

END OF BOOKLET A
Proceed to Booklet B

ST. HILDA'S PRIMARY SCHOOL
PRELIMINARY EXAMINATIONS, 2012
MATHEMATICS
PRIMARY SIX
PAPER ONE
BOOKLET B

Do not write in this space

Name: _____ ( )

Class: P6 / _____ **Marks:** _____ / 20

Date: 3 August 2012 **Parent's Signature:** _____

Time for Booklets A and B: 50 minutes

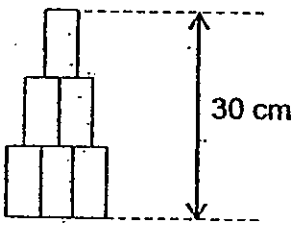
You are not allowed to use a calculator.

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 Express 1.4 as a percentage.

Ans: _____ %

17 6 identical cans of drinks are stacked together as shown below.
Find the height of 1 can.



Ans: _____ cm

Do not write in this space

18 Find the value of $\frac{4}{5} \div 10$.

Express your answer as a fraction in its simplest form.

Ans: _____

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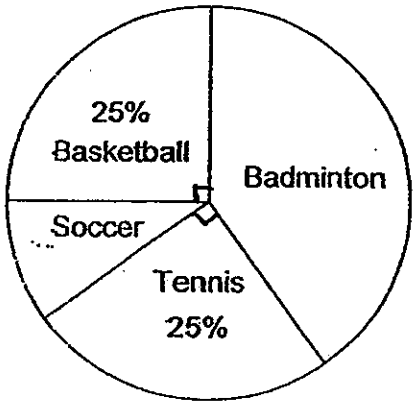
19 The pie chart below shows the number of members in 4 CCAs in a school.
There are 75 members in tennis and 120 members in badminton.
Find the number of members in soccer.



Ans: _____

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20 Express $3\frac{11}{12}$ as a decimal.

Round off your answer to 2 decimal places.

Ans: _____

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21 The distance between Siti's flat and the public library is 1.5 km. How long will Siti take if she walks from her flat to the library at an average speed of 60 m/min?

Do not write in this space

Ans: _____ min

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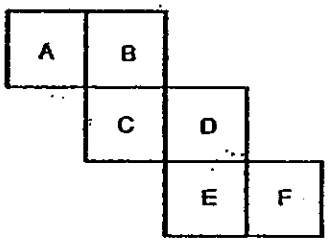
22 The figure below shows the net of a cube. Which 2 faces lie opposite each other?



Ans: _____ and _____

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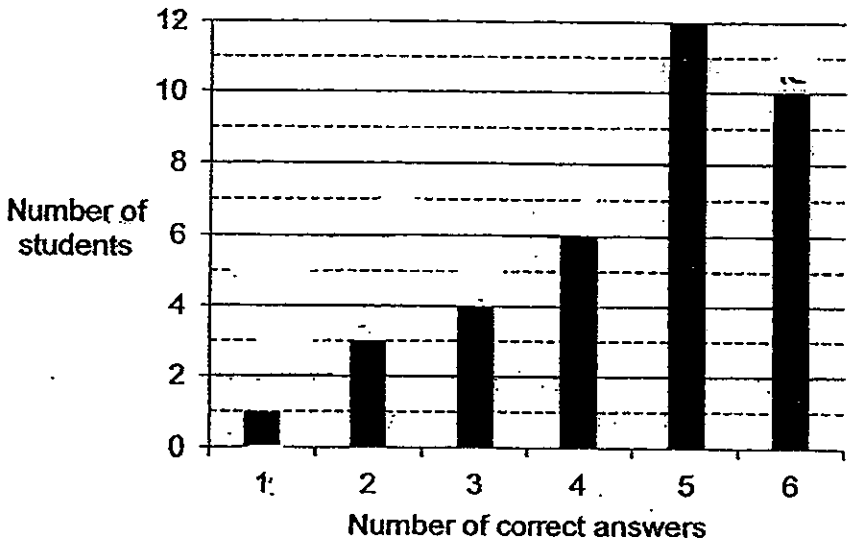
23 Find the value of $\frac{3r}{4} + 2r$ when $r = 7$.

Express your answer in its simplest form.

Ans: _____

Do not write in this space

24 A class of 36 pupils sat for a test.
Their results are shown in the graph below.
To pass the test, a pupil must obtain **at least** 4 correct answers.
What fraction of the class failed the test?
Give your answer in the simplest form



Ans: _____

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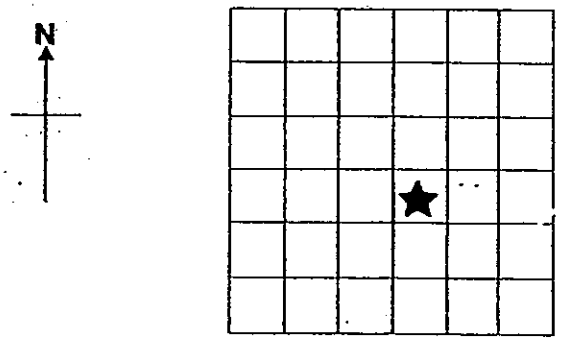
25 Study the diagram below carefully.



Ben started from one of the squares in the grid above.
He walked 3 squares to the west, 2 squares to the south and then 2 squares to the east.
He ended in the square indicated by the star.
Put a cross (X) in the square to indicate Ben's starting point.

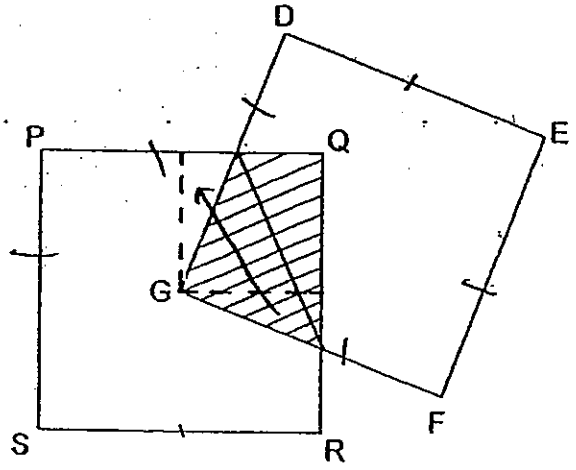
Questions **26** to **30** carry 2 marks each. Show your working clearly in the space below each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. **(10 marks)**

Do not write in this space

26 Maria spent $\frac{1}{4}$ of her allowance on Monday.
She spent $16 more on Tuesday than on Monday.
She finished all her allowance on Wednesday on 2 books that cost $12 each.
How much was her allowance?

Ans: $ _____

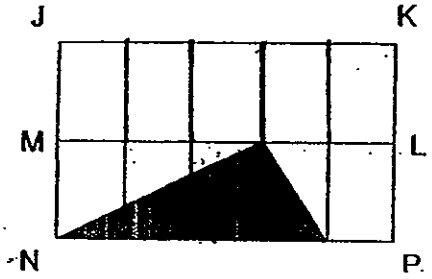
27 The figure below is not drawn to scale.
It is made up of 2 identical squares, DEFG and PQRS, overlapping each other.
The area of each square is 100 cm².
Point G is the centre of square PQRS.
What fraction of the figure is shaded?
Give your answer in its simplest form.



Ans: _____

28 The figure below is made up of two identical rectangles JKLM and LMNP.
Rectangle LMNP is divided into 5 equal parts.
What percentage of the whole rectangle is **unshaded**?

Do not write in this space



Ans: _____ %

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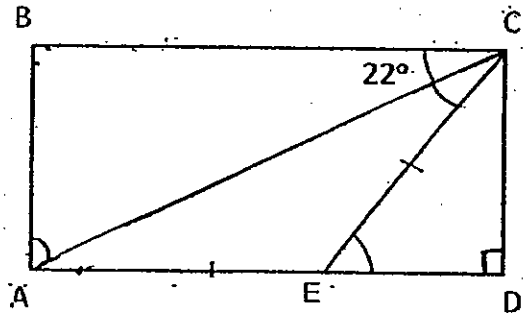
29 The figure below is not drawn to scale.
ABCD is a rectangle and ACE is an isosceles triangle.
Find ∠CED.



Ans: _____ °

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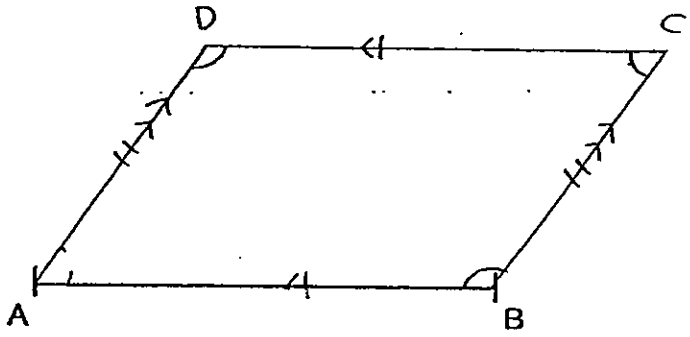
and label

30 Draw a parallelogram ABCD such that $\angle DAB = 55°$ and line BC is 4 cm long.

Do not write in this space



END OF BOOKLET B
Have you checked your work carefully?

Do not write in this space

ST. HILDA'S PRIMARY SCHOOL
PRELIMINARY EXAMINATIONS, 2012
MATHEMATICS
PRIMARY SIX
PAPER TWO

Name: _____ ( )

Class: P6 / _____ **Marks:** _____ / 60

Date: 3 August 2012 **Parent's Signature:** _____

Time: 1 hour 40 minutes

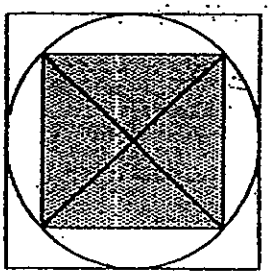
You are allowed to use a calculator.

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 Zack and Ryan had a certain number of game cards.
Zack had $12p$ more game cards than Ryan.
After Zack gave away $18p$ game cards, he had $\frac{3}{4}$ as many game cards left as Ryan.
How many game cards did Ryan have?
Express your answer in terms of p in its simplest form.

Ans: _____

2 The figure below, not drawn to scale, consists of 2 squares and a circle.
What fraction of the figure is shaded?
Express your answer in its simplest form.



Do not write in this space

Ans: _____

3 Shirley has a packet of flour weighing 555 g.
Every day, from Monday to Thursday, she uses 15 g and every day, from Friday to Sunday, she uses 30 g.
What is the least number of days Shirley needs to finish the packet of flour?

Ans: _____ days

4 The charges for 2 buffet catering companies, A and B, are shown below.
The 2 companies would charge the same amount for Richard's 1-day event.
How many people did Richard cater for?

Do not write in this space

Company	Miscellaneous Cost Per Day	Cost Per Person Per Day
A	$40	$15
B	$16	$17

Ans: _____

5 Numbers are arranged in rows (1, 2, 3, 4 ...) and columns (A, B, C, D) as shown below.

	A	B	C	D
Row 1		5	10	15
Row 2	30	25	20	
Row 3		35	40	45
Row 4	60	55	50	
Row 5		65	70	75

Which row and column will the number 430 be?

Ans: Row _____ Column _____

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)**

Do not write in this space

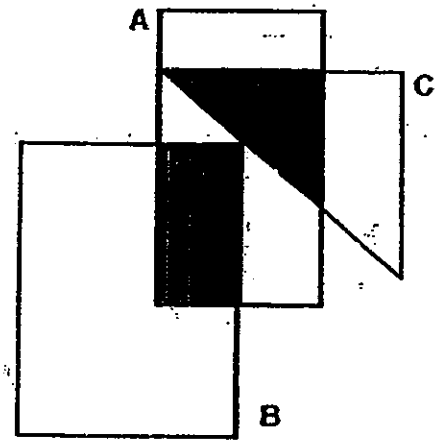
6 Harry took 18 rides at a theme park.
The rides cost \$1.20 and \$0.50 each.
Altogether, he spent \$16 at the theme park.
How many of the rides he took cost \$0.50 each?

Ans: _____ **[3]**

7 There were 187 pupils in the school choir and the Guzheng Club.
When $\frac{3}{5}$ of the Guzheng Club members and $\frac{5}{6}$ of the choir members left to attend a competition, an equal number of members in the two groups remained in school.
How many members were there in the choir?

Ans: _____ **[3]**

8 The figure below, not drawn to scale, shows 2 overlapping rectangles A and B and a triangle C.
60% of rectangle A is shaded.
$\frac{5}{6}$ of rectangle B is unshaded.
$\frac{1}{2}$ of triangle C is shaded.
The area of the shaded triangle and the area of the shaded rectangle are in the ratio 1:1.
What is the ratio of the area of the total shaded parts to the area of the whole figure?

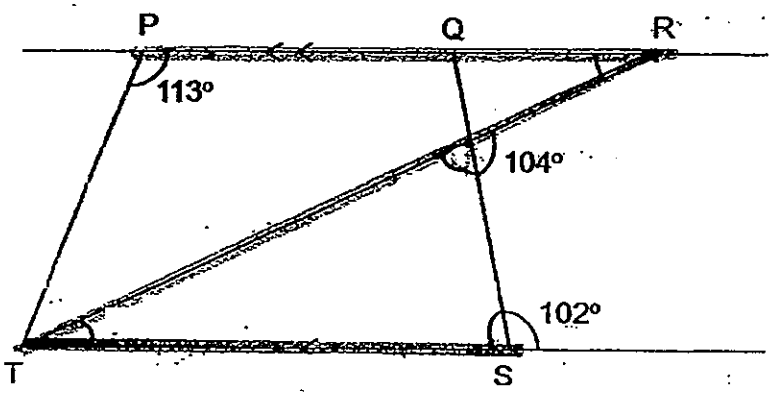


Ans: _____ [3]

Do not write in this space

Do not write in this space

9 In the figure below, not drawn to scale, PQST is a trapezium.
PR // TS.
Find ∠QRT.



Ans: _____ [3]

10 Town Y and Town Z are 375 km apart.
Mr Ang drives from Town Y towards Town Z at a uniform speed of 60 km/h.
Mr Chan drives from Town Z to Town Y at a uniform speed of 90 km/h.
Both Mr Ang and Mr Chan start their journey at the same time.
How far has Mr Ang driven when he passes Mr Chan on the road?

Ans: _____ [3]

11 There were some red and some blue marbles in a box.

The number of red marbles was $\frac{3}{5}$ the number of blue marbles.

On Monday, $\frac{2}{3}$ of the red marbles and $\frac{2}{3}$ of the blue marbles were removed.

On Tuesday, 52 red marbles and 40 blue marbles were removed.

The number of red marbles left was 25% of the number of blue marbles left.

How many red marbles were in the box at first?

Do not write in this space

Ans: _____ [4]

12 A car was travelling from Town P to Town Q.

After completing $\frac{2}{7}$ of the journey in $\frac{1}{2}$ hour, the car passed a van travelling at a constant speed of 70 km/h in the same direction. 3 hours later, the car reached Town Q but the van was still 65 km away from Town Q.

(a) Find the average speed of the car.

(b) If the van left Town P at 08 10, at what time would it arrive at Town Q?

Do not write in this space

Ans: (a) _____ [3]

(b) _____ [1]

13 Chef Wan baked three types of loaves.
He baked 24 more carrot loaves than corn loaves.
He baked 48 more corn loaves than walnut loaves.
He then sold $\frac{2}{3}$ of the carrot loaves, $\frac{3}{4}$ of the corn loaves and $\frac{1}{2}$ of the walnut loaves.
There were altogether 101 loaves left at the end of the day.
How many carrot loaves did Chef Wan bake?

Do not write in this space

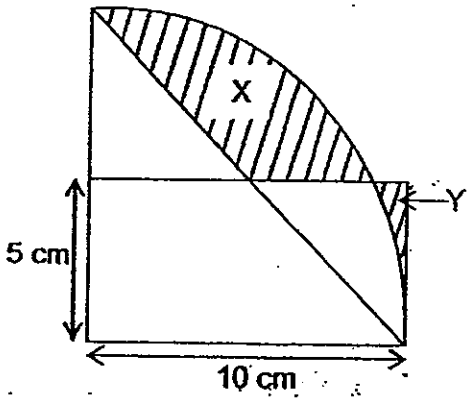
Ans: _____ [4]

14 Ali and Bob each have some money.
If Ali spends $96, the ratio of the amount of money Ali has to the amount that Bob has will be 3 : 5.
If Bob spends $96, the ratio of the amount of money Ali has to the amount Bob has will be 11 : 13.
How much do the two boys have altogether?

Do not write in this space

Ans: _____ [4]

15 The figure below, not drawn to scale, consists of a rectangle, a quadrant and an isosceles triangle.
The radius of the quadrant is 10 cm.
Use the calculator value of π to find the difference between the shaded areas of X and Y, correct to 2 decimal places.



Do not write in this space

Ans: _____ [4]

16 At a supermarket, there were 520 more oranges than apples.
12.5% of the oranges and 20% of the apples were sold.
In the end, there were 488 more oranges than apples left.
How many fruits were left?

Do not write in this space

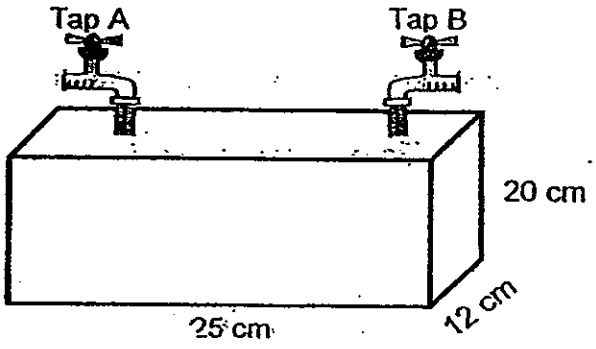
Ans: _____ [5]

17 A tank, 25 cm by 12 cm by 20 cm, was $\frac{1}{5}$-filled with water at first.

Tap A, which could fill the tank completely in 2 hours, was turned on first. Tap B, which could fill the tank completely in 6 hours, was turned on 20 minutes after Tap A was turned on.

(a) How much water was in the tank after 20 minutes?

(b) How long did it take to fill the rest of the tank completely with water?



Do not write in this space

Ans: (a) _____ [2]

(b) _____ [3]

Do not write in this space

18 A number of passengers boarded an empty MRT train at Pasir Ris station.

At Tampines station, $\frac{2}{5}$ of them alighted and 80 passengers boarded the train.

At Simei station, 223 passengers alighted and 38 boarded the train.

The train now has $\frac{3}{8}$ of the number of passengers when it left Tampines station.

(a) How many passengers were on the train when it left Simei station?

(b) How many passengers were on the train when it left Pasir Ris station?

Ans: (a) _____ [2]

(b) _____ [3]

END OF PAPER TWO

Have you checked your work carefully?

ST. HILDA'S Primary School
Preliminary Examinations 2012
Answer Key for P6 Mathematics
Paper 1

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

16. 140

17. 10

18. $^{2}/_{25}$

19. 30

20. 3.92

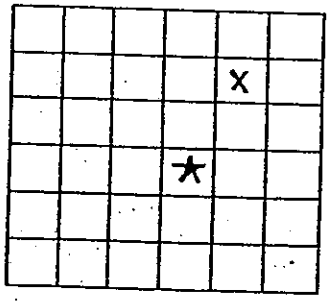
21. 25

22. A, D

23. $19^{1}/_{4}$

24. $^{2}/_{9}$

25.



26. 12 x 2 = 24
2u + 16 +24 → 4u
2u + 40 → 4u
40 → 2u
$80 → 4u

27. 100 x $^{1}/_{4}$ = 25
100 + 100 = 200
200 – 25 = 175
$^{25}/_{175} = {}^{5}/_{35} = {}^{1}/_{7}$

28. 10u – 2u = 8u

$^{8u}/_{10u} = {}^{8}/_{10} = {}^{4}/_{5}$

$^{4}/_{5} \times {}^{100}/_{1} = \underline{80\%}$

29. $90^\circ + 22^\circ = 112^\circ$

$<BAC = 180^\circ - 112^\circ = 68^\circ$

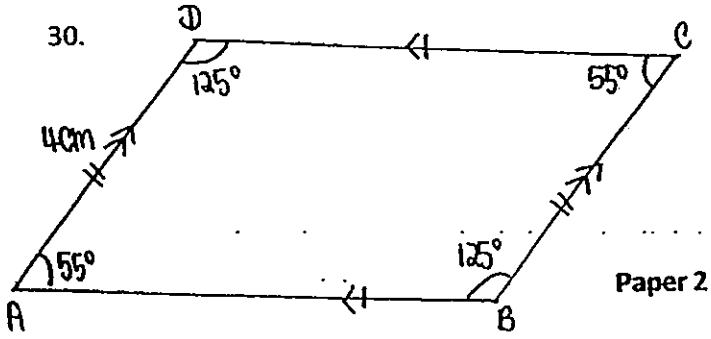
$<CAE = 90^\circ - 68^\circ = 22^\circ$

$<AEC = 180^\circ - (22^\circ \times 2)$

$= 136^\circ$

$<CED = 180^\circ - 136^\circ = \underline{44^\circ}$

30.



Paper 2

1. $4u - 6p \rightarrow {}^{3}/_{4}$ (4u)

   $4u - 6p \rightarrow 3u$

   $6p \rightarrow 1u$

   $\underline{24p} \rightarrow 4u$

2. $\underline{1/2}$

3. $15 \times 4 = 60$

   $30 \times 3 = 90$

   $90 + 60 = 150$

   $555 \div 150 = 3$ r 105

   $3 \times 7 = 21$

   $105 = 30 + 30 + 15$

   $21 + 3 + 1 = \underline{25}$

4. $40 - 16 = 24$

   $17 - 15 = 2$

   $24 \div 2 = \underline{12}$

5. Row $\underline{29}$ Column $\underline{C}$

6. $18 \times 1.20 = 21.60$

   $21.60 - 16 = 5.60$

   $1.20 - 0.50 = 0.70$

   $5.60 \div 0.70 = \underline{8 \text{ rides}}$

7. $5u + 12u = 187$

   $17u \rightarrow 187$

   $1u \rightarrow 11$

   $12u \rightarrow \underline{132 \text{ members}}$

8. A : B : C
U:S U:S U:S
40:60 5:1 1:1
4:6 15:3 3:3
4u + 18u + 6u = 28u
S:T
6:28
= <u>3:14</u>

9. $180° - 104° = 76°$
Angle QST = $180° - 102° = 78°$
Angle STR = Angle QRT = $180° - 76° - 78° =$ <u>$26°$</u>

10. 90 – 60 = 30
90 + 60 = 150
375 ÷ 150 = 2.5
2.5 X 60 = <u>150 km</u>

11. 4(3u - 52) → 5u – 40
12u – 208 → 5u – 40
12u – 168 → 5u
12u – 5u → 168
7u → 168
1u → 24
9u → <u>216 red marbles</u>

12. (a) 0.5 + 3 = 3.5
70 x 3 = 210
210 + 65 = 275
275 ÷ 5 = 55
55 x 7 = 385
385 ÷ 3.5 = <u>110 km/h</u>

(b)385 ÷ 70 = 5.5
5.5h = 5h 30 min
0810 → <u>1340</u>

13. $^1/_3u + 24 + {}^1/_4u + 12 + ½u \rightarrow 101$
$^1/_3u + 24 + {}^1/_4u + 12 + {}^2/_4u \rightarrow 101$
$^1/_3u + {}^2/_4u + 36 \rightarrow 101$
$^4/_{12}u + {}^9/_{12}u + 36 \rightarrow 101$
$^{13}/_{12}u + 36 \rightarrow 101$
$^{13}/_{12}u \rightarrow 65$
½u → 5
1u → 60
60 + 72 = <u>132 carrot loaves</u>

14.

	A		B		
If A spends $96	3	:	5	→	8
If B spends $96	11	:	13	→	24

If A spends $96 9 : 15 → 24

11u – 9u = 2u
2u → 96
1u → 48
24u → 1152
1152 + 96 = $1248

15. ¼ x 10^2 x ∏ = 25∏
5 x 20 = 50
10 ÷ 2 = 5
½ x 5 x 5 = 12.5
25∏ - 50 = 25∏ - 50 – 12.5
= 16.04 cm^2 (2d.p)

16. (87.5%u + 455) – 488 → 80%u
87.5%u – 33 → 80%u
87.5%u - 80%u → 33
7.5% → 33
1% → 4.4
87.5%u + 80%u → 167.5%u
167.5%u → 737
737 + 455 = 1192 fruits

17. (a) Tap A
1 tank → 2h
½ tank → 1h
½ tank → 60 min
$^1/_6$ tank → 20 min
$^1/_5 + ^1/_6 = ^{11}/_{30}$
$^{11}/_{30}$ x 12 x 25 x 20 = 2200 ml

(b) 25 x 12 x 20 = 6000
6000 – 2200 = 3800
6000 x $^1/_{90} = 66^2/_3$
5800 ÷ $66^2/_3$ = 57 min

18. (a) 80 + 105 = 5/8
185 → 5/8
37 → 1/8
111 → 3/8

(b) 296 → 8/8
296 – 80 = 21.6
216 ÷ 3 = 72
72 x 5 = 360