

NANYANG PRIMARY SCHOOL
FIRST SEMESTRAL EXAMINATION
2010

PRIMARY 6
MATHEMATICS
PAPER 1

DURATION: 50 MINUTES

Booklet A	/ 20	Paper 1 Total: / 40
Booklet B	/ 20	

Name: _____ ()

Class: Primary 6 ()

Date: 14 May 2010

Parent's Signature: _____

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

ANSWER ALL QUESTIONS.

YOU ARE **NOT** ALLOWED TO USE A CALCULATOR.

PAPER 1 (BOOKLET A)

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 oval (1, 2, 3 or 4) on the Optical Answer Sheet.

(20 marks)

1 Edric has \$1052 in his bank account. He has \$581 more than his sister. How much money does his sister have?

(1) \$471

(2) \$571

(3) \$1 533

(4) \$1 633

2 $1\frac{3}{5}$ of a number is 200. What is the number?

(1) 75

(2) 120

(3) 125

(4) 320

- 3 Arrange the following fractions from the greatest to the smallest.

$$\frac{4}{11}, \frac{2}{7}, \frac{3}{10}$$

(1) $\frac{4}{11}, \frac{3}{10}, \frac{2}{7}$

(2) $\frac{3}{10}, \frac{2}{7}, \frac{4}{11}$

(3) $\frac{2}{7}, \frac{3}{10}, \frac{4}{11}$

(4) $\frac{2}{7}, \frac{4}{11}, \frac{3}{10}$

- 4 A factory packs 3.9 kg of meat equally into 40 bags. What is the mass of each bag of meat?

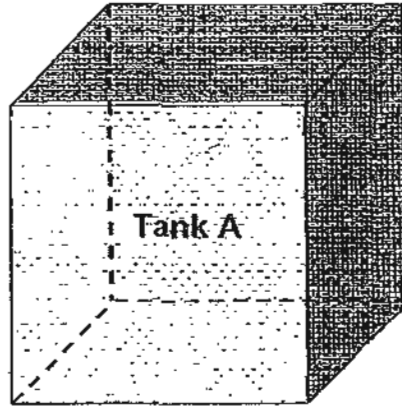
(1) 0.975 g

(2) 9.75 g

(3) 97.5 g

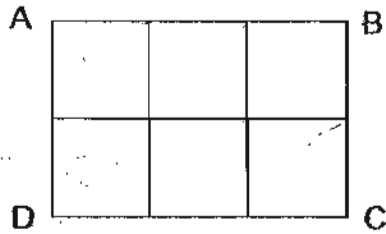
(4) 975 g

- 5 Tank A, a cube with sides 6 cm, is filled with water to the brim. Find the volume of the water. (Give your answer in litres.)



- (1) 0.216 l
- (2) 2.16 l
- (3) 21.6 l
- (4) 216 l

- 6 The rectangle ABCD shown below is made up of 6 identical squares with an area of 64 cm^2 each.



Find the perimeter of the rectangle.

- (1) 80 cm
 - (2) 96 cm
 - (3) 136 cm
 - (4) 384 cm
- 7 $2672 \div \boxed{?} = 8002 - 7998$

The missing number in the box is _____.

- (1) 668
- (2) 334
- (3) 8
- (4) 4

- 8 Mrs. Su used y m of cloth to make 3 shirts and 3 pairs of shorts. If she used 10 m of cloth to make 3 shirts and 5 pairs of shorts, which one of the following algebraic expressions shows the amount of cloth used to make one pair of shorts?

(1) $(4y)$ m

(2) $(10 - \frac{y}{2})$ m

(3) $(5 - y)$ m

(4) $(\frac{10 - y}{2})$ m

- 9 In a primary school, 75 out of 250 Primary One pupils wear glasses. What percentage of Primary One pupils wears glasses?

(1) 0.3 %

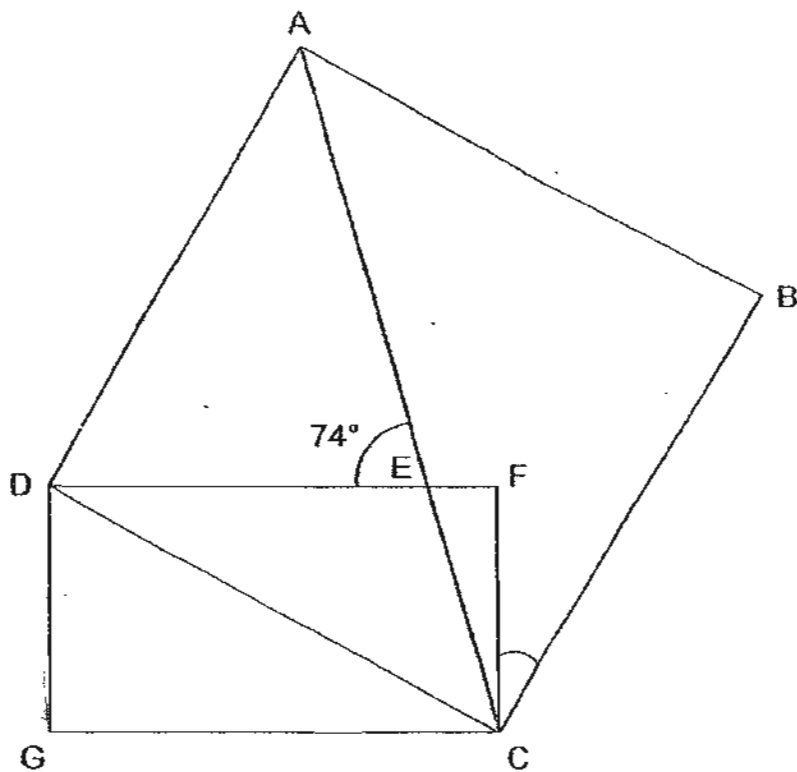
(2) 0.7 %

(3) 30 %

(4) 70 %

- 10 In the diagram below, not drawn to scale, ABCD is a square and DFCG is a rectangle.

Given that $\angle AED$ is 74° , find $\angle FCB$.



- (1) 16°
- (2) 19°
- (3) 26°
- (4) 29°

- 11 Mrs. Loh bought $\frac{5}{8}$ kg of sugar. She used $\frac{1}{3}$ of the sugar for making dessert and another $\frac{1}{4}$ kg to make a jelly. How much sugar did she have left?

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

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

(3) $\frac{5}{16}$ kg

(4) $\frac{7}{12}$ kg

- 12 The number of stamps that June has is 75% of the number of stamps that Kelly has and $\frac{3}{5}$ of the number of stamps that Jolene has. If Kelly has 180 stamps, how many stamps does Jolene have?

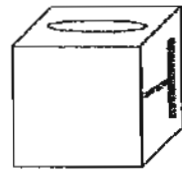
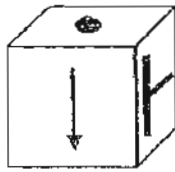
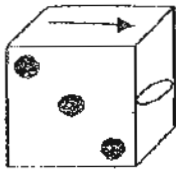
(1) 81

(2) 135

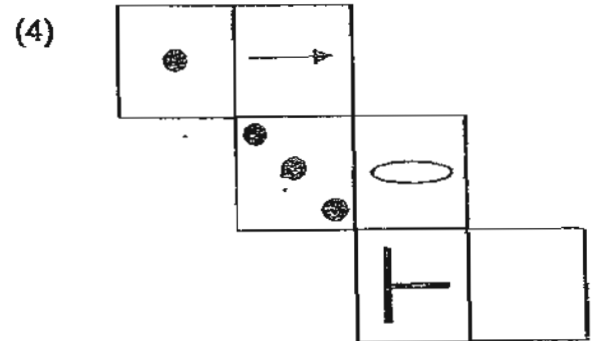
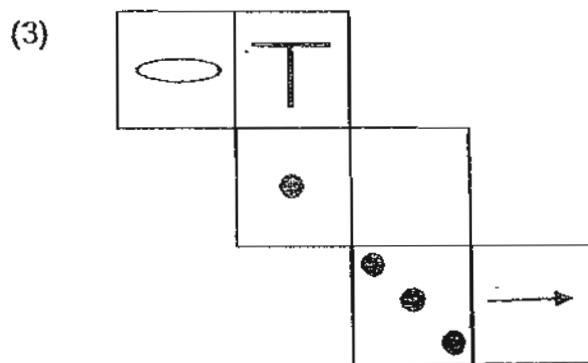
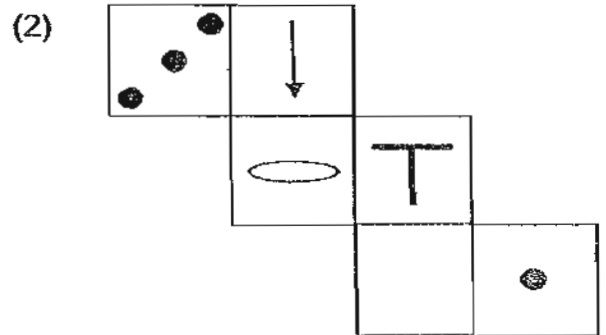
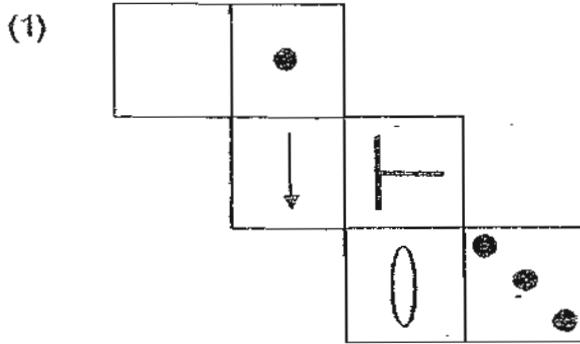
(3) 225

(4) 675

13 The following pictures show a cube placed at different angles.



Which one of the following nets correctly forms the cube?



- 14 Benjamin and Tom shared some cards in the ratio $8 : 5$. After Benjamin gave his brother, Frank, $\frac{3}{4}$ of his cards, Frank had 520 cards. If Tom had 200 cards, find the ratio of the number of cards Frank had to the number of cards Benjamin had at the end.

(1) $3 : 4$

(2) $7 : 5$

(3) $7 : 8$

(4) $13 : 2$

- 15 Both Jack and Susan started their journey at 11 a.m. Jack drove from Town A towards Town B at a constant speed of 70 km/h. Susan drove from Town B towards Town A at a constant speed of 50 km/h. Town A is 260 km from Town B. At what time did they meet?

(1) 1.10 p.m.

(2) 2.10 p.m.

(3) 2.42 p.m.

(4) 4.12 p.m.

Name: _____ () . Class: Pr 6 ()

P6 SA1 2010

PAPER 1 (BOOKLET B)

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 What is the value of $90 - 9 \div (12 - 3) + 11$?

Ans: _____

17 Express $10\frac{4}{7}$ as a decimal. (Leave your answer correct to 1 decimal place.)

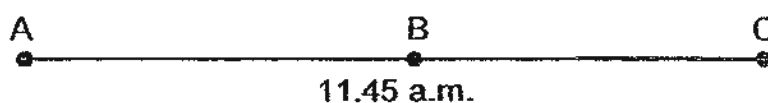
Ans: _____

18 $713 \div \boxed{?} = 0.713 \times 10$

What is the missing number in the box?

Ans: _____

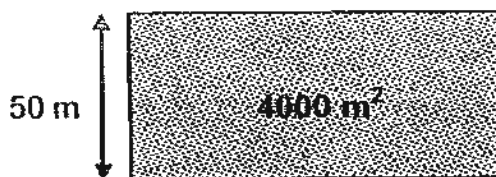
19 Look at the time line below.



If A represents a time 2 h 15 min before B and C represents a time 7 h 30 min after A, what is the time represented by C?

Ans: _____ p.m.

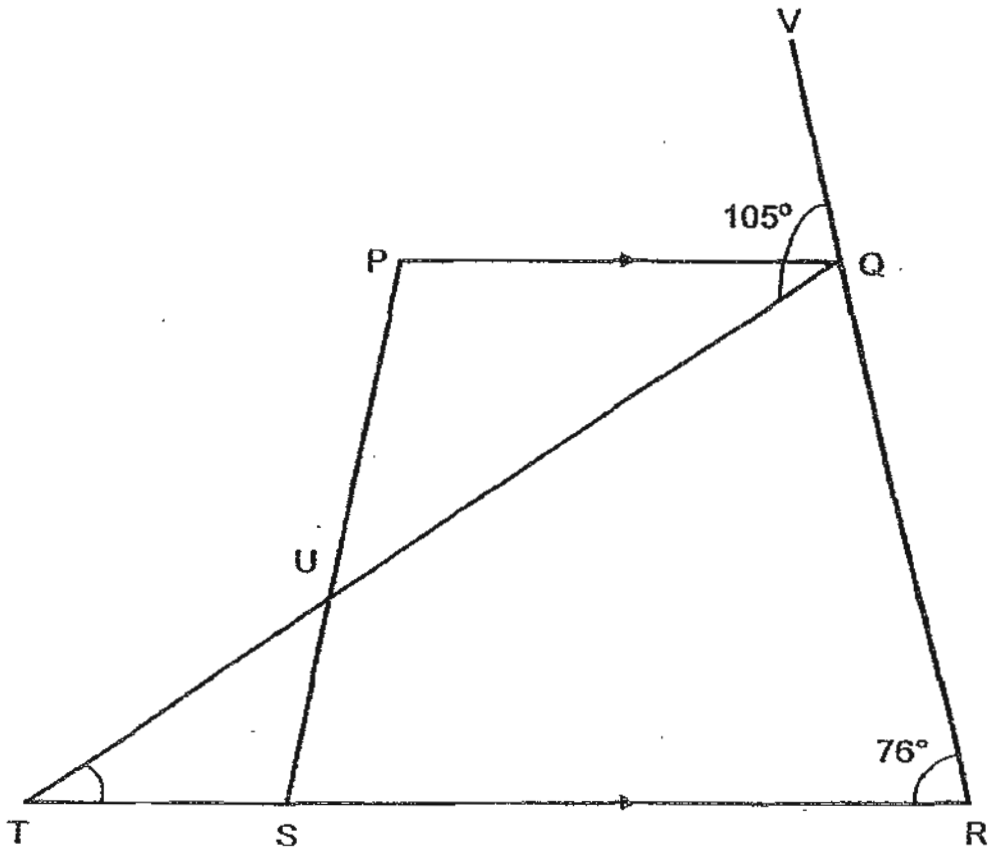
20 Sandy ran 1 round around the rectangular field shown below.



Given that the area of the field was 4000 m^2 and the breadth was 50 m, what was the total distance covered by Sandy? (Leave your answer in km.)

Ans: _____ km

- 21 In the figure below, not drawn to scale, PQRS is a trapezium. QUT, TSR and VQR are straight lines.



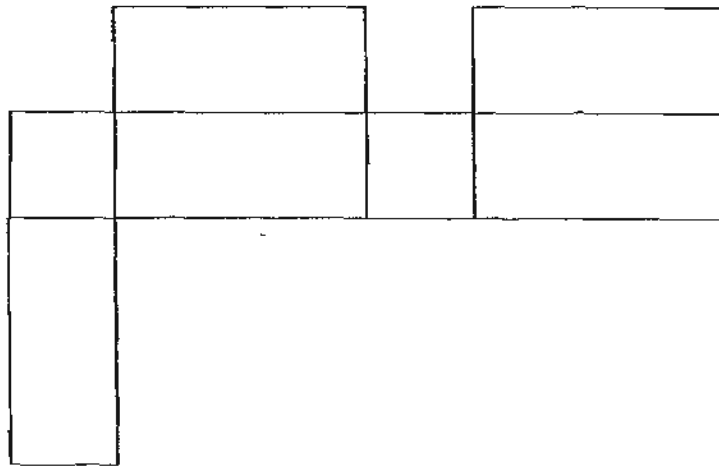
Given that $\angle TQV$ is 105° and $\angle TRV$ is 76° , find $\angle QTR$.

Ans: _____^o

22 The diagram below shows a solid.



Ali drew the net of the solid as shown below but Paul told him that he had drawn it wrongly. Put an 'X' on the face of the net that is incorrect.



23 The price of 3 pens is \$ p . There is a discount of 5¢ for each pen. If Hillary bought 6 pens, how much did she pay in all?

Ans: _____ ¢

- 24 At first, the ratio of Dolly's savings to Molly's savings was 4 : 3. Each of them spent \$60. If Molly had \$360 left, how much did Dolly have at the beginning?

Ans: \$ _____

- 25 Isabel ate $\frac{3}{8}$ of a cake. She then shared the remaining cake equally among her 4 cousins. What fraction of the cake did each of her cousins receive?

Ans: _____

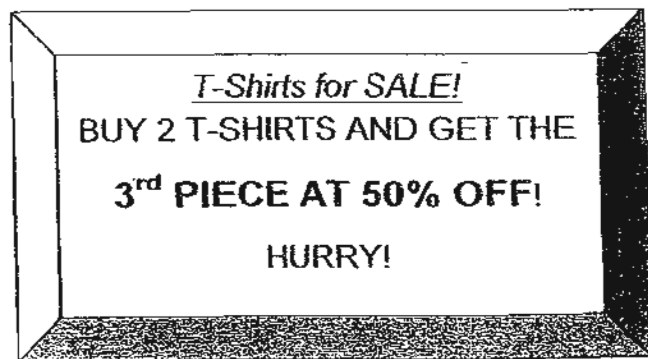
Questions 26 to 30 carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated.

(10 marks)

- 26 Given that $a \times b = 36$, where a and b are different numbers, where the value of a is smaller than the value of b , find the sum of all the possible values of a and b .

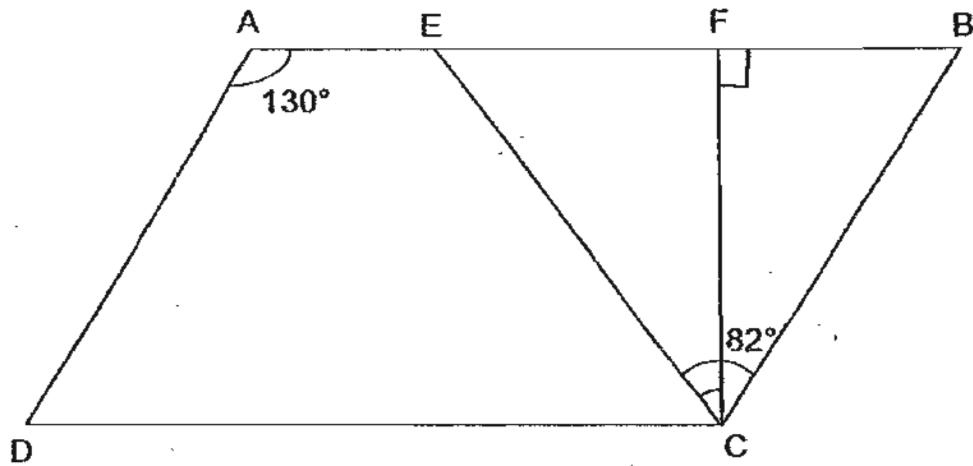
Ans: _____

- 27 Tongs Departmental Store was having a sale. Ruby bought 3 t-shirts and paid an average of \$15.50 for each t-shirt. Find the original price of 1 t-shirt.



Ans: \$ _____

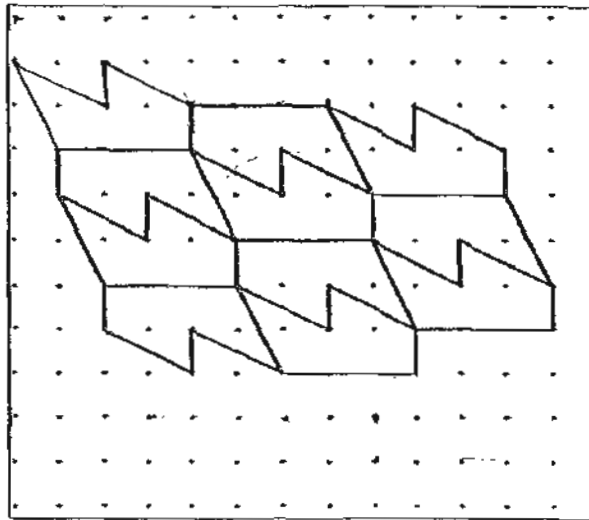
- 28 In the figure below, not drawn to scale, ABCD is a parallelogram and E is a point on line AB. FBC is a right-angled triangle.



Given that $\angle ECB$ is 82° and $\angle DAB$ is 130° , find $\angle ECF$.

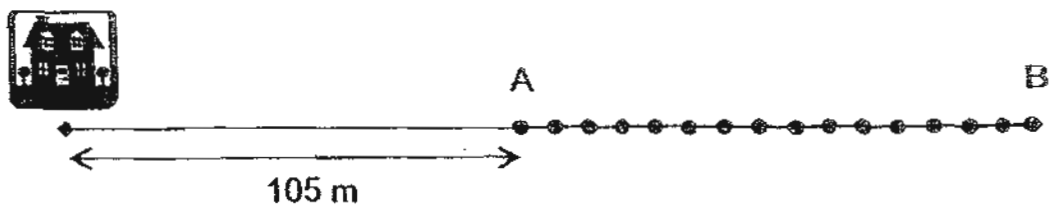
Ans: _____^o

- 29 The pattern in the box shows part of a tessellation. Extend the tessellation by drawing four more unit shapes in the space provided within the box.

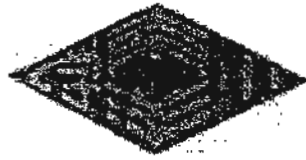


- 30 Terry walked from his house to Point A in 1 minute. He then took another 1 minute to walk from Point A to Point B. There were 16 lamp posts found from Point A to Point B, each placed at an equal interval of 9 m. What was Terry's average speed to travel from his house to Point B? (Leave your answer in m/s.)

Terry's House



Ans: _____ m/s



NANYANG PRIMARY SCHOOL
FIRST SEMESTRAL EXAMINATION
2010

PRIMARY 6
MATHEMATICS
PAPER 2

DURATION: 1 HOUR 40 MINUTES

Paper 2 Total	/ 60
GRAND TOTAL	/ 100

Name: _____

Class: Primary 6 ()

Date: 14 May 2010

Parent's Signature: _____

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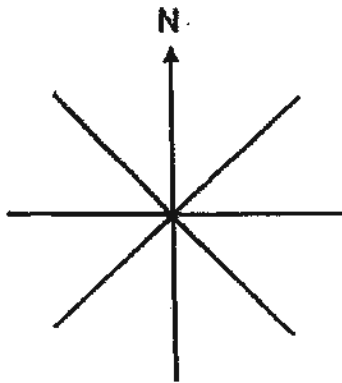
YOU ARE ALLOWED TO USE A CALCULATOR.

PAPER 2

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 A hiker had his back facing south-west after turning 225° anti-clockwise. What direction was he originally facing?



Ans: _____

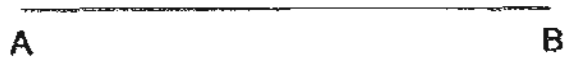
-
- 2 A condominium unit was sold at \$810 000, when rounded off to the nearest ten thousand dollars. What was the lowest possible selling price?

Ans: \$ _____

3 Using a protractor and set squares, construct a parallelogram ABCD such that

(a) $\angle ABC = 60^\circ$, and

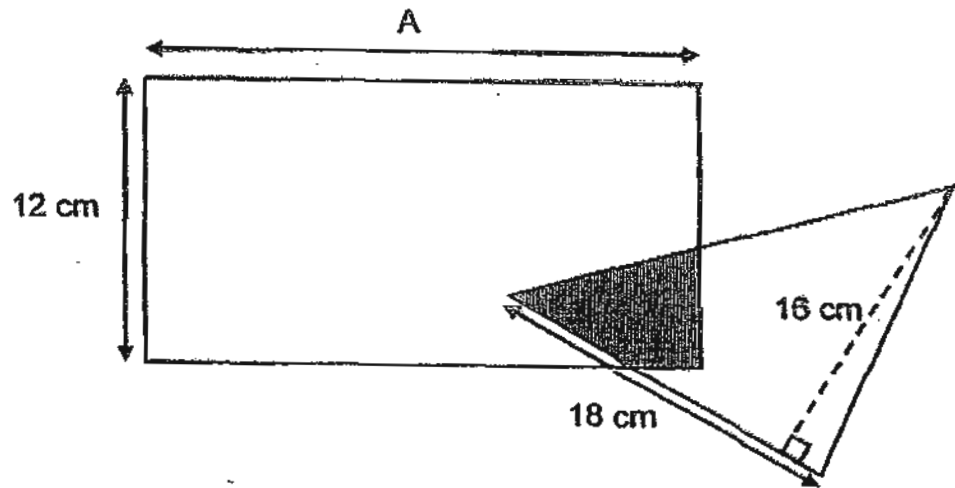
(b) AD is 4 cm.



4 If $k = 6$, find the value of $\frac{4k}{3} - 3 + 8k + 10 - 7k$

Ans: _____

- 5 The ratio of the area of the shaded region to the area of the triangle is $1 : 4$. The ratio of the area of the shaded region to the area of the rectangle is $1 : 9$. Find the value of A .



Ans: _____ cm

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)

-
- 6 Darren saves \$1.40 daily and Sonia saves \$1.10 more than him daily. Although Sonia started saving one week later than Darren, she has now saved \$2.30 more than him.

How many days has Darren been saving?

Ans: _____ [3]

-
- 7 $\frac{7}{11}$ of the guests at a party are adults. The ratio of the number of boys to the number of girls is 7 : 13. There are 330 more adults than girls. What is the total number of people at the party?

Ans: _____ [3]

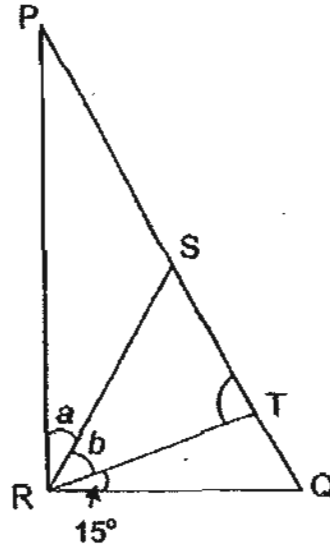
- 8 The distance between Town X and Town Y was 875 km. Kenny started his journey from Town X to Town Y at an average speed of 70 km/h. After he had covered $\frac{3}{5}$ of the journey, he decided to increase his speed so that he could reach town Y one hour earlier. What was the increase in speed for the remaining part of the journey?

Ans: _____ [3]

- 9 Lisa had 25% as much money as Ken at first. Lisa and Ken won \$1304 and \$10 respectively at a lucky draw. In the end, Lisa had 20% more money than Ken. How much money did Lisa have at first?

Ans: _____ [3]

- 10 The diagram below shows a right angle triangle, PQR, not drawn to scale. Given that $\angle TRQ = 15^\circ$, $PS = SR$ and the ratio of $\angle a : \angle b$ is $2 : 3$, find $\angle STR$.



Ans: _____ [3]

63

11 Four boxes, A, B, C and D, contain some marbles.

Box A contains $\frac{1}{7}$ of the total number of marbles in Boxes B, C and D.

Box B contains $\frac{1}{2}$ of the total number of marbles in Boxes C and D.

Box C contains $1\frac{1}{3}$ the number of marbles in Box D.

(a) If Boxes A and B contain 34 more marbles than Box C, how many marbles are there in Box A?

(b) How many marbles must be removed from Box C to Boxes A, B and D so that it contains $\frac{1}{6}$ of the total number of marbles?

Ans: (a) _____ [3]

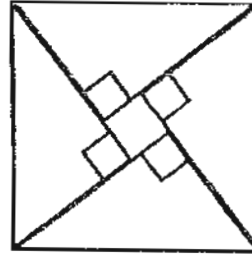
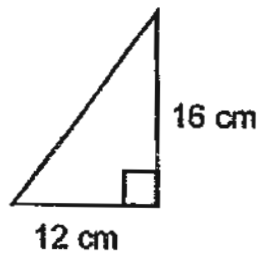
(b) _____ [1]

12 A courier company charged \$25 for every large parcel and \$15 for every small parcel delivered safely. However, a penalty of \$50 was charged for every damaged parcel, regardless of size.

This month, the company delivered 120 parcels of which $\frac{1}{4}$ of them were small parcels. It collected a total of \$2000 after paying a penalty for an equal number of large and small parcels. How many large parcels were delivered safely?

Ans: _____ [4]

- 13 In the right angle triangle below, the two sides which form the right angle are 16 cm and 12 cm respectively. 4 such triangles are arranged to form a big square as shown. Find the perimeter of the big square.



Ans: _____ [4]

14 Nancy started cycling from Point X to the library at 9 a.m. at a uniform speed of 500 m/min. At 9.10 a.m., Nancy passed Sam as he started cycling from Y towards the library at a certain uniform speed. At 9.20 a.m., Sam was 1 km ahead of Nancy. They continued cycling towards the library and Sam reached there at 9.37 a.m.

- (a) What was Sam's speed? (Leave your answer in km/h.)
- (b) What was the distance from Point X to the library? (Leave your answer in km.)

Ans: (a) _____ [2]

(b) _____ [2]

15 Study the number pattern below.

	A	B	C	D	Total
Row 1	1		2		3
Row 2		3		4	7
Row 3	5		6		11
Row 4		7		8	15
Row 5	9		10		19

- a) What is the sum of the two numbers in Row 100?
- b) What are the two numbers in Row 100?
- c) Under which column, A, B, C or D, will the number 587 appear?

Ans: (a) _____ [2]

(b) _____ [1]

(c) _____ [1]

- 16 An equal number of girls and boys went to a party. The ratio of the number of girls who wore spectacles to the number of boys who wore spectacles was $11 : 3$. The ratio of the number of girls who did not wear spectacles to the number of boys who did not wear spectacles was $3 : 5$.
- (a) Find the ratio of the number of boys who wore spectacles to the number of boys who did not wear spectacles.
- (b) There were 7 times as many girls as boys who left the party. The ratio of the number of girls to the number of boys who remained at the party became $35 : 38$. If there were 560 girls remaining at the party, how many girls left the party?

Ans: (a) _____ [2]

(b) _____ [3]

17 John travelled from Town Q to Town R at an average speed of 72 km/h. He travelled $\frac{7}{12}$ of the journey at an average speed of 70 km/h. After that, he decided to increase his speed to travel the remaining 450 km to Town R.

(a) Find John's speed in the last 450 km of the journey.

(b) If Kenny started his journey from Town R to Town Q at the same time as John at a constant speed of 90 km/h, how far would he have travelled before he met John?

Ans: (a) _____ [3]

(b) _____ [2]

18 Robert always spends 60% of his monthly income. His income in August was less than that in July. As a result, his expenditure in August decreased by \$1134.

- (a) If his expenditure in July was \$2520, what was the percentage decrease in income in August?
- (b) If Robert's expenditure in September was \$756 more than his expenditure in August, what was the ratio of his income in September to his income in July?

Ans: (a) _____ [3]

(b) _____ [2]

END OF PAPER

Setters: Mrs Alison Loo
Mrs Cassandra Ng

ANSWER SHEET

EXAM PAPER 2010

SCHOOL : NANYANG PRIMARY
SUBJECT : PRIMARY 6 MATHEMATICS

TERM : SA1

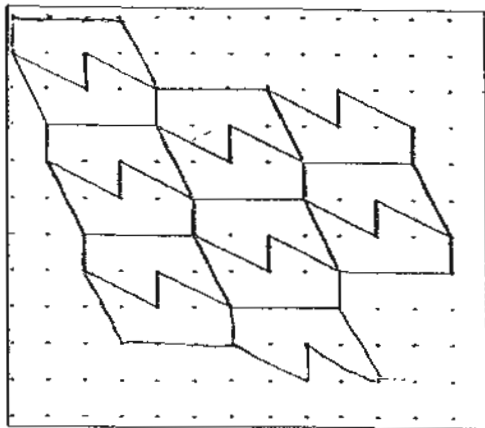
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
1	3	1	3	1	1	1	4	3	4	1	3	2	4	1

16)100 17)10.6 18)100 19)5.00pm 20)0.26km

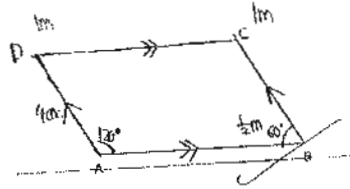
21)29° 22)  23)(200p – 30)c

24)\$560 25)5/32 26)85 27)\$18.60 28)42°

29) 30)2 m/s



Paper 2

<p>1) West</p>	<p>2) \$805,000</p>
<p>3)</p> 	<p>4) 21</p>
<p>5) Area of triangle = $\frac{1}{2} \times 18 \times 16 = 144 \text{ cm}^2$ Area of shaded region = $\frac{1}{4} \times 144 = 36 \text{ cm}^2$ Area of rectangle = $36 \times 9 = 324 \text{ cm}^2$ Length of rectangle, A = $324 / 12 = 27 \text{ cm}$</p>	<p>6) $7 \times \\$1.40 = \\9.80 $\\$9.80 + \\$2.30 = \\$12.10$ $\\$12.10 \div \\$2.30 = 11$ $11 + 7 = 18$</p>
<p>7) Adults $\rightarrow 35$ Boys $\rightarrow 7$ Girls $\rightarrow 13$ $22 \rightarrow 330$ $1 \rightarrow 15$ $55 \rightarrow 55 \times 5 = 825$ people</p>	<p>8) Remaining distance to be travelled $= 875 \times \frac{2}{5} = 350 \text{ km}$ Time needed for the remaining distance as that he can reach town Y one hour earlier $= 350 / 70 - 1 = 4$ hours Speed required for the remaining journey = $350 / 4 = 87.5 \text{ km/h}$ Increase in speed = $87.5 - 70 = 17.5 \text{ km/h}$</p>
<p>9) <u>Lisa</u> <u>Ken</u> $\\$(u)$ $\\$(4u)$ $U + 1304 = 1.2(4u + 10)$ $U + 1304 = 4.8u + 12$ $3.8u = 1292$ $U = \\$340$</p>	<p>10) $90^\circ - 15^\circ = 75^\circ$ $\angle a = \frac{2}{5} \times 75^\circ = 30^\circ$ $\angle b = \frac{3}{5} \times 75^\circ = 45^\circ$ $\angle STR = 180^\circ - 60^\circ - 45^\circ = 75^\circ$</p>
<p>11) <u>A</u> <u>B+C+D</u> <u>B</u> <u>C+D</u> <u>C</u> <u>D</u> $1: 7$ $1: 2$ $4: 3$ $= 2: 21$ $7: 14$ $8: 6$ <u>A</u> <u>B</u> <u>C</u> <u>D</u> $3: 7: 8: 6$ a) $10u - 8u = 2u \rightarrow 34$ $1u \rightarrow 17$ $3u \rightarrow 17 \times 3 = 51$ marbles</p>	<p>11) b) $3u + 7u + 8u + 6u = 24u$ $\frac{1}{6}(24u) = 4u$ $8u - 4u = 4u \rightarrow 4 \times 17 = 68$ marbles</p>

<p>12) <u>Large parcels</u> <u>Small parcels</u> $120 \times \frac{3}{4} = 90$ $120 \times \frac{1}{4} = 30$</p> <p>$90 \times \\$25 + 30 \times \\$15 = \\2700 $\\$2700 - \\$2000 = \\$700$ $\\$700 / \\$100 = 7$ $90 - 7 = 83$ Large parcels</p>	<p>13) $\frac{1}{2} \times 12\text{cm} \times 16\text{cm} = 96\text{cm}^2$ $96\text{cm}^2 \times 4 = 384\text{cm}^2$ $16\text{cm} - 12\text{cm} = 4\text{cm}$ $4\text{cm} \times 4\text{cm} = 16\text{cm}^2$ $384\text{cm}^2 + 16\text{cm}^2 = 400\text{cm}^2$ $\sqrt{400} = 20$ $20\text{cm} \times 4 = 80\text{cm}$</p>
<p>14) a) $550 \times 10 = 5000\text{m}$ $5000\text{m} + 1000\text{m} = 6000\text{m}$ $6000 / 10 = 600\text{m}/\text{min} = 36\text{km}/\text{h}$</p> <p>b) $500 \times 10 + 600 \times 27 = 21200\text{m}$ $= 21.2\text{km}$</p>	
<p>15) a) The sum of the two number in Row 100 is $3 + (100 - 1) \times 4$ $= 3 + 99 \times 4 = 3 + 396 = 399$</p> <p>b) The two numbers in Row 100 are $\frac{399 - 1}{2} = 199$ and $\frac{399 + 1}{2} = 200$ respectively</p> <p>c) $587 \div 4 = 146 \text{ R}3$ 3 is in column B and so is the number 587</p>	
<p>16) a) $11u + 3v = 3u + 5v$ $\rightarrow 8u = 2v$ or $v = 4u$ $3u : 5v = 3u : 5(4u) = 3u : 20u = 3 : 20$</p> <p>b) Girls remained = 560 Boys remained = $560 / 35 \times 38 = 608$ $7u - u = 6u \rightarrow 608 - 560 = 48$ $\rightarrow 1u = 8$ $\rightarrow 7u = 56$ girls</p>	<p>17) a) $\frac{630 + 450}{72 + 72} = \frac{1080}{144} = 7.5$ hours $\frac{630}{70} = 9$ hours</p> <p>Speed of John in the last 450km $= \frac{450}{15-9} = \frac{450}{6} = 75\text{km}/\text{h}$</p> <p>b) $\frac{1080}{70+90} = \frac{1080}{160} = 6.75$ hours $90 \times 6.75 = 607.5\text{km}$</p>
<p>18) a) $\frac{2520}{0.6} = \\$4200$ $2520 - 1134 = \\$1386$ $\frac{1386}{0.6} = \\$2310$</p> <p>Percentage decrease in income in August = $\frac{4200 - 2310}{4200} = 45\%$</p>	<p>18) b) $756 + 1386 = \\$2142$ $\frac{2142}{0.6} = \\$3570$ $3570 : 4200 = 17:20$</p>