Paper 1

Section 1 - Non Calculator

1 $\frac{18}{24}$ reduces to the fraction $\frac{\square}{\square}$

2 When 8 is divided by $\frac{2}{3}$, the answer would be:

O 12 O $5\frac{1}{3}$ O 6 O 16

3 2.5 - 1.8 is the same as:

O 1.7 O 1.3 O 0.7 O 0.3

4 $(0.6)^2$ =

O 0.36 O 0.12 O 3.6 O 36

5 A girl finds the sum of the squares of 4 and 3. She then finds the square root of her answer. Her answer should now be:

O 7 O 5 O 12 O 25

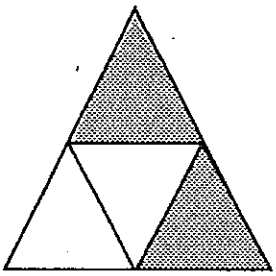
6 The number of tenths in three fifths would be:

O $\frac{3}{50}$ O $1\frac{1}{2}$ O 8 O 6

7 Write $4\frac{2}{3}$ hours in minutes: $\square\square\square$

8 Write $7\frac{3}{5}$ m in centimetres: $\square\square\square$

9 What fraction of the diagram below is shaded?



O $\frac{2}{3}$ O $\frac{3}{4}$ O $\frac{1}{2}$ O $\frac{1}{3}$

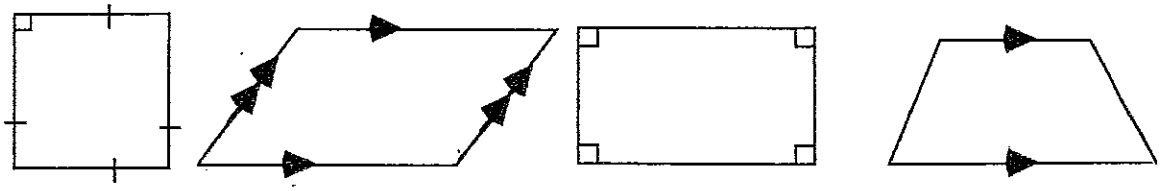
10 45% means 9 parts out of:

O 10 O 100 O 50 O 20

11 If 0.38 is expressed as a percentage, you get:

O 0.38% O 3.8% O 38% O 380%

12 How many of the following quadrilaterals could be *thought of* as a trapezium?

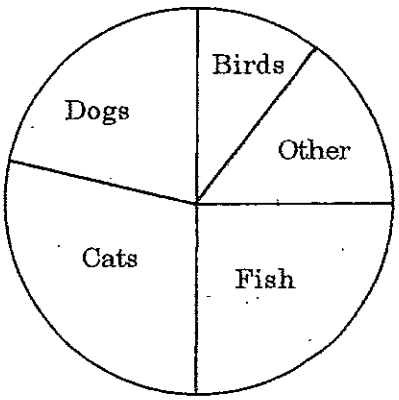


Answer: ☐

13 A ship sailing due East turns through an angle of 135° in an anticlockwise direction. It would then be sailing on what bearing?

O NE O SE O SW O NW

Questions 14-15



14 We completed a survey for our year at school. We needed to compare the types of pets that students had. We recorded our findings on a sector graph (pie chart):

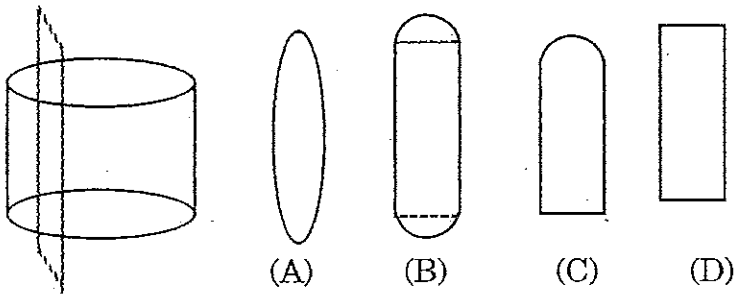
The most popular choice of pet was:

O Dogs O Cats
O Fish O Other

15 From the graph what would be an estimate of the percentage of dogs?

☐☐☐ %

16 A solid is cut with a knife. The cut is parallel to the dotted line shown on the diagram. What would the shape of the cross section be?



17 I want to increase the product of 5 and 3 by the sum of 2 and 9 and halve the answer. Which of the following correctly states this?

O $\frac{5 \times (3 + 2 + 9)}{2}$ O $\frac{5 \times (3 + 2) + 9}{2}$

O $\frac{5 \times 3 + 2 + 9}{2}$ O $\frac{5 \times 3 \times (2 + 9)}{2}$

18 The number 3000 + 500 + 70 + 1 can be written as: ☐☐☐☐

19 Consider the 4 in the number 17 346 892. Its value would be:

O 4 O 4000 O 40 000 O 400 000

Each of questions 20 and 21 may have MORE THAN ONE correct answer. Fill in EVERY correct answer for each of these questions.

20 Which of the following quadrilaterals have two pairs of equal opposite angles?

O Parallelogram O Kite
O Rhombus O Isosceles trapezium

21 Which of the following equals 17?

O $3 + 4 \times 2 + 6$ O $6 + 2 \times 2 + 1$
O $8 \times (3 - 2) + 9$ O $(2 \times 51 \div 2) \div 3$

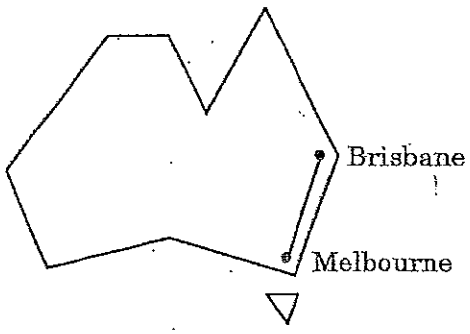
End of questions in Section 1 that may require you to fill in more than one correct answer.

22 One cubic centimetre of water weighs one gram. How many kilograms are there in 6.2L of water?

O 62 O 6.2 O 0.62 O 0.062

23 The digits of the number 3957 are rearranged in as many ways as possible to form other 4 digit numbers. The difference between the largest number and the smallest will be:

24 In an exam, a student needs to know the approximate area of Australia. She knows that the distance from Brisbane to Melbourne is approximately 1400km and draws a rough sketch of Australia. Using these two pieces of information, she was able to write down her approximation. Write down a reasonable approximation in square kilometres.



25 A digital clock shows the time to be 9:34, but it is 15 minutes slow. I have to meet a friend at 11:22 and it will take me 25 minutes to get there. At what time, *as shown on this clock*, should I leave if I am to be there on time?

		:		

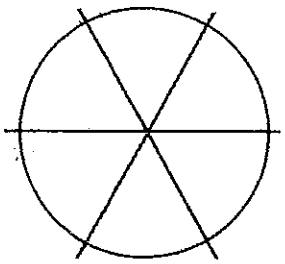
Section 2 - Part A

26 Evaluate $\frac{4.17 \times \sqrt{2.86}}{43.9 + \sqrt{61.2}}$, giving your answer to 5 significant figures.

27 Round 41927 off to the nearest thousand.

28 Find the value of $\frac{5}{12} + \frac{5}{8}$

29



In a construction, a student divided the circumference of a circle into six equal parts. Each of the 6 points of division was joined to the centre of the circle. What would be the size of each angle at the centre of the circle.

30 A taxi can take 4 passengers. How many trips would a taxi have to make in order to take 27 passengers from an airport to town?

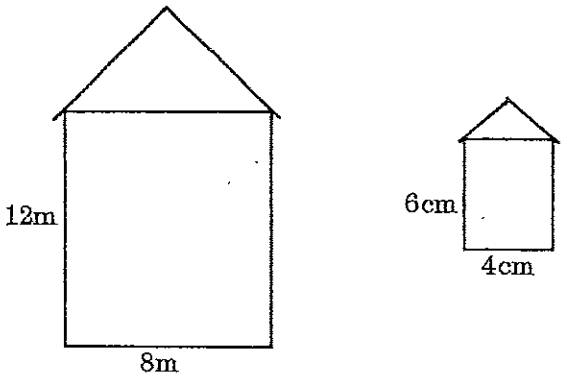
31 Which one of the numbers 4, 5, 6, 9 could be placed in the box to give a fraction which lies between 0.11 and 0.16? $\frac{1}{\square}$

32 The parallel faces of a cylinder are

(A) squares (C) rectangles
(B) circles (D) trapeziums

33 The drawing on the right is a scale drawing of a house - shown on the left.

Using the information on the diagram, write down the scale used.



1cm = ☐☐☐☐ metres

34 How many minutes will it take a car travelling at 40kmh^{-1} to travel 12km?

35 The bar graph below shows how a girl spends her time at a holiday camp.

The percentage of her time spent sleeping is

O 40% O $33\frac{1}{3}\%$ O 50% O 20%

36 The line below is the length of one side of a cube.

—

Which of the following lines would give the best approximation to the sum of the edges of the cube?

(A) ——————

(B) ——————————

(C) ——————————————

(D) ——————————————————

37 What is the mode of the letters of the word PARRAMATTA ?

O R O A O T O 4

38 The perimeter of a rectangle is 212m. Its length is 69m. Find its breadth.

39 Melo can buy 4 lemons for $3. Cani can buy 7 lemons for $5. Melo and Cani each buy $60 worth of lemons. How many more lemons did Cani buy than Melo?

40 A child has 5 plastic tiles - 3 equal rectangles and two congruent triangles. Which of the following might it be possible for the child to build if she used all the tiles?

(A) rectangular prism (B) tetrahedron
(C) triangular prism (D) rectangular pyramid

41 What number could replace the X in order to complete the pattern below?

129 65 X 17 9 5

42 What measurement, in kilograms, is shown on the weighing scale below?

43 There are 4 sports played by students in our class. Each student plays one and only one sport. Half the class plays either cricket or tennis and half of that number play cricket. Eight students play soccer and six students play hockey. How many students are there in the class?

44 My weekly salary increased by 100%. I now receive $540. What did I get before the increase?

45 Write down the range of the marks awarded in our last test;

47, 32, 56, 66, 38, 29, 61, 65, 47, 64, 33

46 The heights of four boys, A, B, C and D are measured. It is found that B is taller than A and D is taller than C. The boys stand in a line with their heights in descending order - i.e. the tallest on the left and the shortest on the right. Which of the following could be the correct order?

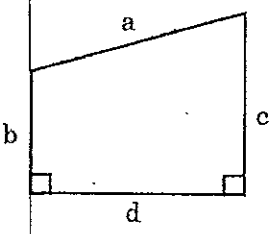
O B A D C O B C A D O D B A C O D B C A

47 Elapp has 3 straws of lengths 4cm, 4cm and 9cm. Which of the following triangles would it be possible for Elapp to make using these straws?

(A) an equilateral triangle
(B) an isosceles triangle
(C) a scalene triangle
(D) none of these

48 In order to find the area of the trapezium, I will need to know

(A) b and d (C) c and d
(B) a and b (D) a, b and d



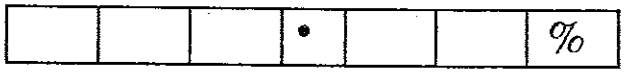
49 There are 4 houses in a school:
Red House, Blue House, Green House, Purple House
Every student belongs to one house. At a sports carnival, the students line up with a student from Red House in first position, then a student from Blue House, then Green then Purple. If this order is continued, to what house will the 277th student belong?

O Red O Blue O Green O Purple

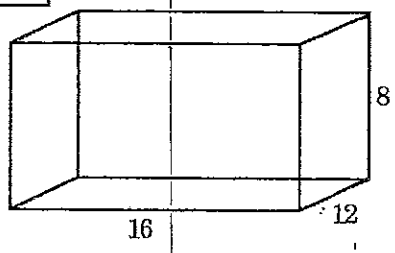
50 On a particular weekend, Miro studied 4 subjects.

Subject	Time studied	
	Start	Stop
French	9:10	10:40
Business studies	11:05	11:50
Biology	12:35	1:15
Music	2:35	3:40

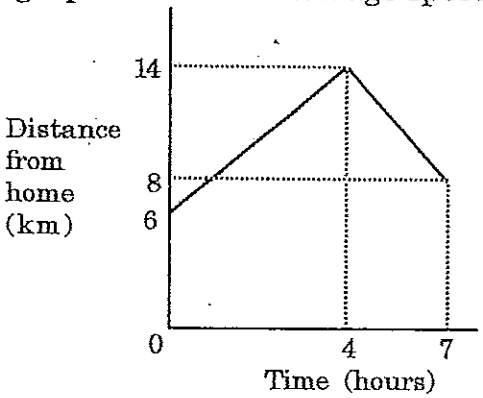
The percentage of time that Miro spent studying French was:



51 A block of butter is in the shape of a rectangular prism measuring 16cm by 12cm by 8cm.
Find the surface area of this block.



52 Use the travel graph to find the average speed of the entire journey:



53 Paint can be bought in 5 sizes:

1000mL cost	$4.50
250mL costs	$1.12
600mL costs	$2.80
1200mL costs	$5.80
2500mL costs	$10.60

Which size is the best value for money?

54 Which of the following equals 25 ?

(A) $4 + 3 \times 2 + 5$ (B) $4 + 3 \times (2 + 5)$

(C) $(4 + 3) \times 2 + 5$ (D) $(4 + 3) \times (2 + 5)$

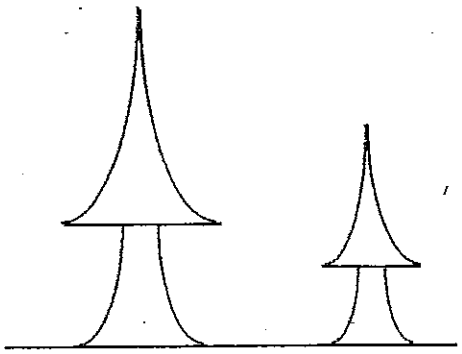
55 Four students A, B, C, D estimated the value of $\sqrt{\dfrac{41.97 \times \sqrt{88.64}}{21.6 + \sqrt{1.987}}}$

Which student gave the best estimate?

(A) 3.2 (B) 43 (C) 4 (D) 39

56 I had completed about $\frac{3}{5}$ of the book and had 80 pages left. How many pages would there be in the book?

57 The heights of two trees are in the ratio 3:2. The height of the larger tree is 12m. What will be the height, in metres, of the smaller tree?



58 Aka always mistakes multiplication and division. The teacher said to multiply a certain number by 5. The correct answer was 325. What would Aka's answer have been.

59 The number 2.4 is multiplied by 3 and the result is subtracted from 12.6, Then that result is divided by 2. What will be the final answer?

60 Which formula would give the total amount of money, $M, received when N adults and C children attended the concert?

(A) $M = 18N + 18C$ (C) $M = 18N - 9C$

(B) $M = 18N + 9C$ (D) $M = 18N + \dfrac{C}{2}$

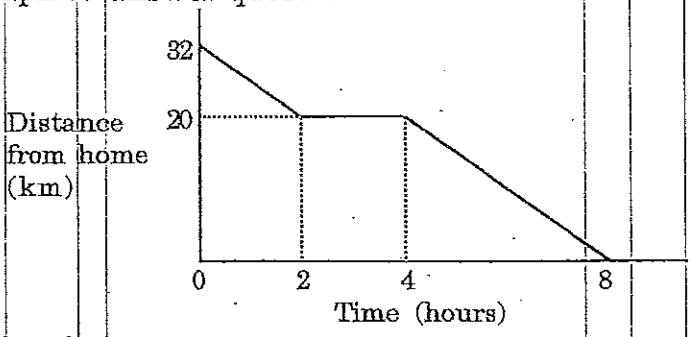
Concert

Adults $18

Children Half price

Use the information on the following graph to answer questions 61 and 62.

Michel was returning home. After 2 hours she stopped for lunch before continuing her journey

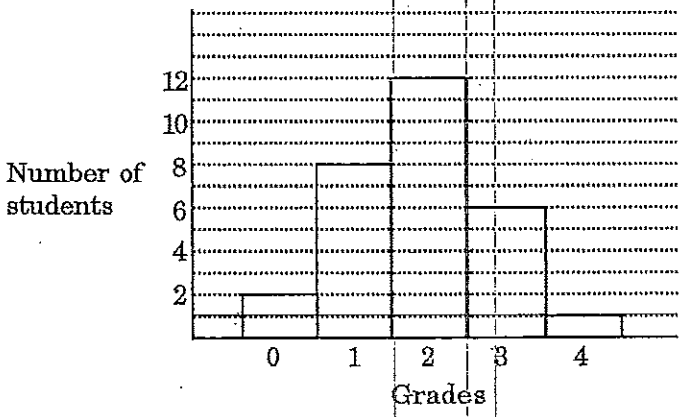


61 How far did Michel travel before lunch?

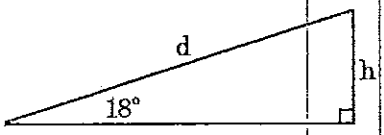
62 What was her average speed for the entire journey in km/h?

63 Adults and children paid different amounts for tickets to the show. Two adults and 4 children paid \$29. Four adults and 5 children paid \$49. Calculate the amount paid by 2 adults and 3 children.

64 A school awards grades 0, 1, 2, 3, 4 to students in Year 10. How many students were there in Year 10?

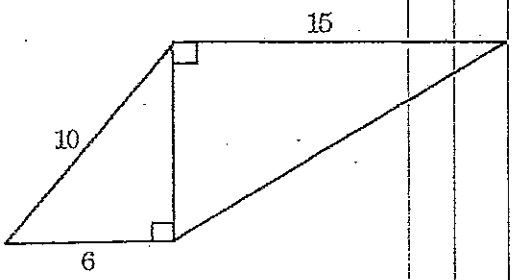


65 A velodrome is built at an angle of 18° as shown in the scale drawing:



The height h represents 4 metres. Find the distance d correct to the nearest metre.

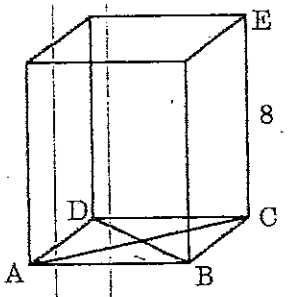
Questions 66-67



66 Use Pythagoras's theorem to help find the perimeter of the figure in the diagram.

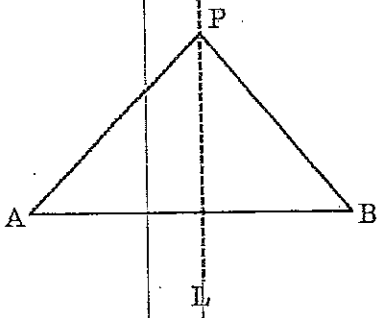
67 A scale drawing of this figure is now made. Its perimeter is 144. Find its area.

68 The prism in the diagram has a base in the shape of a rhombus. If AC = 6cm and BD = 5cm and CE = 8cm, find the volume of the prism in cubic centimetres.

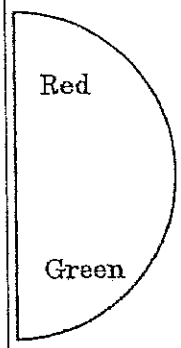


69 AB is a fixed straight line. L is the right bisector of AB. The point P can be drawn anywhere on the line L. Which of the following statements are true?

(A) triangle APB is always equilateral
(B) triangle APB may be right angled
(C) triangle APB is always isosceles
(D) triangle APB is scalene

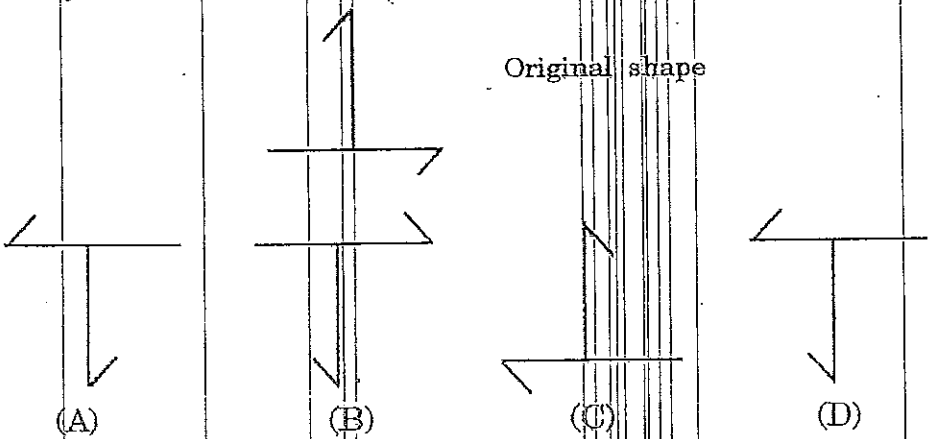


70 Two thirds of a semicircle is to be painted red and the remaining sector is to be painted green. Use your protractor and ruler to draw the line separating red and green.

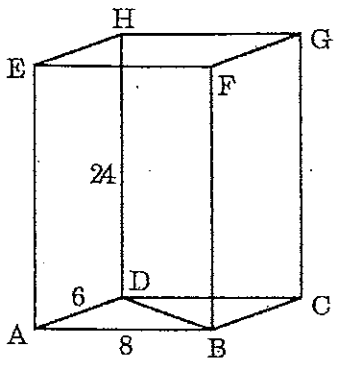


71 The following shape has been transformed by using first a reflection and secondly a rotation. Which of the following shapes shows the new shape?

Original shape



Questions 72-73 The diagram shows a rectangular prism, in which AB = 8cm, AD = 6cm and HD = 24cm.



72 Find the length of the diagonal DB

73 Find the length of diagonal BH

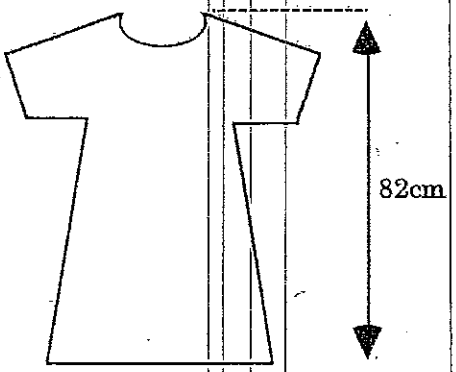
74 There are 3 roads leading from Sydney to Melbourne. There are 2 roads leading from Melbourne to Adelaide. In how many ways can a person drive from Sydney to Adelaide?

75 The standard school uniform was 82cm long. In a class of 12 students, the number of centimetres that the dress was too long or too short was recorded.

2, -3, 0, -1, 4, 6, -2, -1, 0, 4, 3, 0

On average the uniform

(A) will have to be lengthened by 1cm
(B) will have to be lengthened by 2cm
(C) will have to be shortened by 1.5cm
(D) will have to be shortened by 1cm



Section 2 - Part B

76 A leaking tap leaks 1.5L of water per hour.

a) How many litres of water will be lost in a week?

b) In the same house with the leaking tap, live 5 people each of whom brush their teeth twice a day. While brushing, they leave the tap running and hence use an extra 2.5L of water each time one of them brushes. How many extra litres of water would the members of this family use by brushing their teeth in a week?

c) How many litres of water will be wasted in this house during a 52 week year?

d) Water costs 80 cents per kilolitre. How much will the wasted water cost over a year? Answer to the nearest dollar.

e) In one particular suburb there are 24 420 houses. Taking the results from the previous questions as an average, how many dollars would be wasted each year by the residents of this suburb?

77 A woman earns $1200 each week.

a) How much would she earn in a 52 week year?

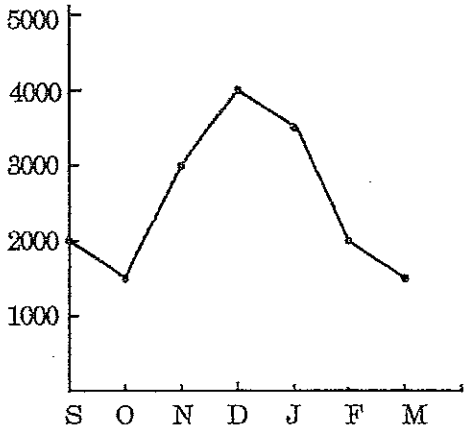
b) The woman pays 30% tax on her salary. How much of her yearly salary does she retain?

c) The woman's salary increases by 20%. How much extra tax will she have to pay?

d) After paying tax, the woman saves the extra money she receives. At the end of one year, how much will she have saved?

e) How many years will elapse before the savings reach $40 000? Answer to 1 decimal place.

78 A singer releases a CD. The number sold in the first 7 months is shown in the graph below:



a) How many CD's were sold in December?

b) How many more CD's were sold in the best month than in the worst?

c) What was the greatest monthly increase in sales?

d) What was the total number sold?

e) What percent of the total number were sold in the months November, December and January?

79 The numbers in the table below form what is called Pascal's Triangle. Each number - apart from the 1's - are found by adding the two numbers above it:
For example: 4 + 6 = 10 and 4 + 1 = 5

Row Number	Pascal's Triangle
0	1
1	1 1
2	1 2 1
3	1 3 3 1
4	1 4 6 4 1
5	1 5 10 10 5 1

a) Write down Row number 6
b) Write down the row which ends with: 10 1
c) Complete the following table:

Row number	Sum of the numbers in that row
0	1
1	2
2	4
3	
4	
5	
6	

d) Write down the numbers in the row which has a sum of 256
e) What would be the sum of the numbers in Row number 10

80 a) If April 13th falls on a Friday, write down the dates of all of the Fridays in April.
b) If July 19th is a Wednesday, write down the dates of all of the Saturdays in July.
c) If November 6th is a Tuesday, on what day will New Year's Day fall?
d) A school has an assembly on every 8th school day. An assembly was held on a Thursday, but the next Assembly Day was the day of the sports carnival. On what day would the next assembly be held?
e) Two girls Killi and Yuni work at a 7-day-a-week supermarket. Killi has every 4th day off. Yuni has every 5th day off. Yuni was off on the 3rd August and Killi was off on the 6th August. What will be the next date that they have off together?

Paper 1 - Solutions

1 $\frac{3}{4}$ 2 12 3 0.7 4 0.36 5 5

6 6 7 280 8 760 9 $\frac{1}{2}$ 10 20

11 38% 12 4 13 N W 14 Cats

15 22% 16 (D) 17 $\frac{5 \times 3 + 2 + 9}{2}$ 18 3571

19 40 000 20 Parallelogram and rhombus

21 $3 + 4 \times 2 + 6$, $8 \times (3 - 2) + 9$ and $(2 \times 51 \div 2) \div 3$

22 6.2 23 6174 24 5 000 000 25 10:42

26 0.13634 27 42 000 28 $1\frac{1}{24}$ 29 60° 30 7

31 9 32 B 33 2 34 18

35 40% 36 D 37 A 38 37 39 4

40 C 41 33 The differences between successive terms are 64, 32, 16, 8, 4

42 800kg 43 28 Cricket = 7, Tennis = 7, Soccer = 8, Hockey = 6

44 $270 45 66 - 29 = 37 46 BADC or DBAC or DBCA 47 D

48 D 49 Red 50 $37\frac{1}{2}\%$ 51 $832cm^2$

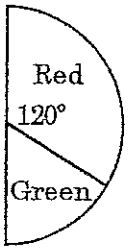
52 2km/h 53 2500mL cost $10.60 54 B 55 C

56 200 57 8m 58 13 59 2.7 60 B

61 12km 62 4km/h 63 $26 64 29

65 13 66 48

67 756 (Each length of the scale drawing is $\frac{144}{48} = 3$ times as large)

68 $120cm^3$ 69 B, C 70 

71 B 72 10

73 26 74 6 75 D

76 a) $1.5 \times 24 \times 7 = 252L$ b) $5 \times 2 \times 2.5 \times 7 = 175L$ c) $52 \times (252 + 175) = 22204L$

d) $\frac{22204}{1000} \times 0.8 = \$18$ e) $24420 \times 18 = \$439\,560$

77 a) $52 \times 1200 = \$62400$

b) $62400 \times 0.7 = \$43\,680$

c) New salary $= 62400 \times 1.2 = 74880$
New tax $= 74880 \times 0.3$
Old tax $= 62400 \times 0.3$
Extra tax = New - old = $3744

d) She receives an extra $74880 - 62400 = 12\,480$
Less tax $= 12\,480 - 3744 = \$8736$

e) $\frac{40000}{8736} = 4.6$ years

78 a) 4000

b) $4000 - 1500 = 2500$

c) $3000 - 1500 = 1500$

d) 17 500

e) $\frac{3000 + 4000 + 3500}{17500} \times 100 = 60\%$

79 a) 1 6 15 20 15 6 1

b) 1 10 45 120 210 252 210 120 45 10 1

c)

Row number	Sum of the numbers in that row
0	1
1	2
2	4
3	8
4	16
5	32
6	64

d) 1 8 28 56 70 56 28 8 1

e) $2^{10} = 1024$

80 a) April 6, 13, 20, 27 b) July 1, 8, 15, 22, 29

c) Tuesday d) Friday

e) Yuni: **3**, 4, 5, 6, 7, **8**, 9, 10, 11, 12, **13**, 14, 15, 16, 17, **18**,

Killi: **6**, 7, 8, 9, **10**, 11, 12, 13, **14**, 15, 16, 17, **18**

They will be off together on the 18th August