

Name: \_\_\_\_\_

Question 1: Natural Numbers. (10 minutes)

a) Look at the list of numbers given below

**-6, 3, 4, 9, 13, 15, 23, 25, 28, 64**

From the list, choose

An even number	
An odd number	
Two prime number	
An integer	
A number that is divisible by 5	
A number that is a factor of 81	

b) Find the value of  $3 \times (3+4) - 2^2$

Answer: \_\_\_\_\_

$(7-3) \times 4 + 16 \div 8$

Answer: \_\_\_\_\_

c) What is the lowest common multiple of 6 and 9?

Answer: \_\_\_\_\_

d) A cinema has 13 rows of seats. The rows are numbered from 1 to 13. Odd-numbered rows have 18 seats. Even-numbered rows have 20 seats. How many seats are in the cinema?

Answer: \_\_\_\_\_

## Question 2: Presenting data (10 minutes)

a) Here are the ages, in years, of some members of a swimming club.

9    12    18    10    9    7    21    30    23    16  
 19    32    17    28    15    8    10    15    21    10

Draw an ordered stem and leaf diagram for these ages.

You must include a key.

0	
1	
2	
3	

Key:

What age is the youngest swimmer? \_\_\_\_\_

How many members are in the club? \_\_\_\_\_

What fraction of the swimmers were aged between 0-11 years? \_\_\_\_

**b)**

A children's shoe shop took a survey of their customers shoe size over one day.

Here is a list of their responses.

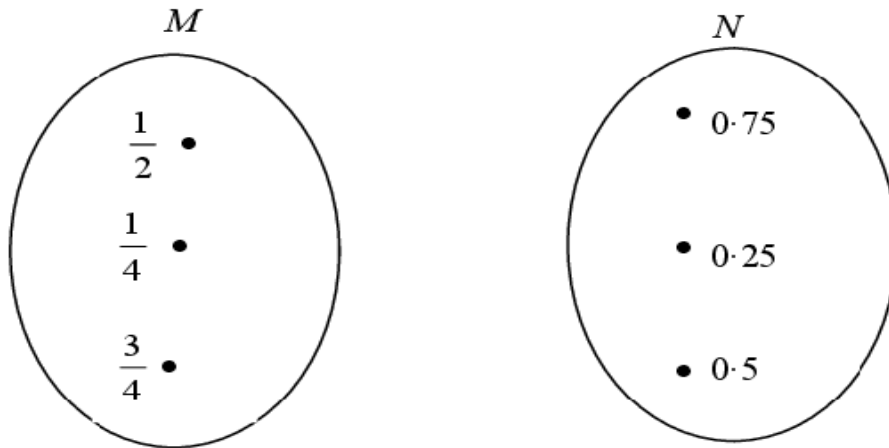
4            2            2            2            1            3            1  
 2            2            3            4            1            2            3  
 2            2            1            1            3            1            3  
 5            1            2            3            4            2            1

Use the list above to complete the TALLY table:

Shoe Size	TALLY	TOTAL
Size 1		
Size 2		
Size 3		
Size 4		
Size 5		

# 1st year MATHS summer test

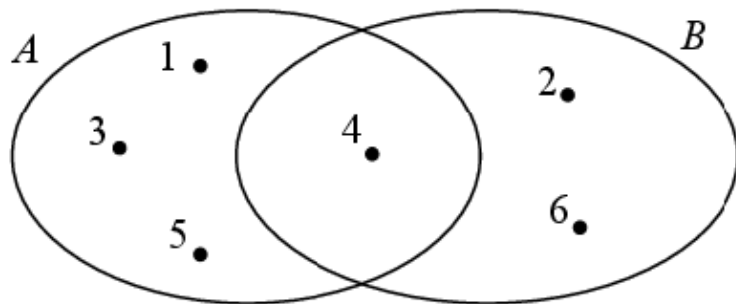
Draw arrows from set  $M$  to set  $N$  to show the relation "is equal to".



c)

d)

The sets  $A$  and  $B$  are shown in the diagram below.



Fill in the elements of the following two sets.





(i)  $A = \{ \quad , \quad , \quad , \quad \}$

(ii)  $A \cap B = \{ \quad \}$

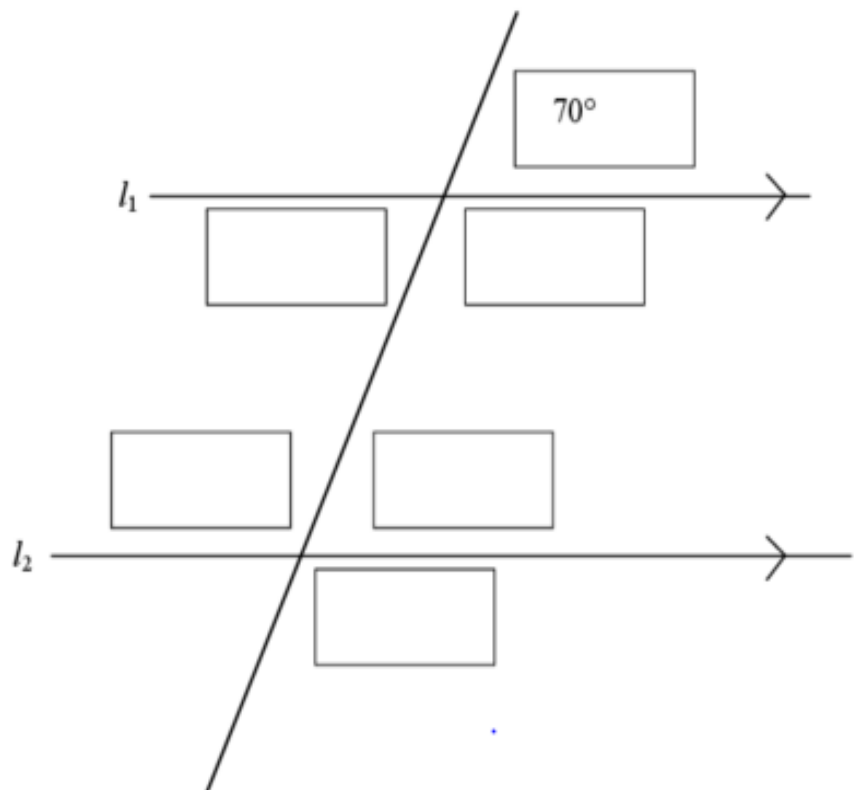


Question 4: Geometry (10 min)

- (a) Four angles are shown below. Write in the space below each diagram whether the angle is straight, acute, obtuse, right or reflex.

- (b) In the diagram below  $l_1 \parallel l_2$ . Write the measure of each angle shown by an empty box into the diagram, without using a protractor.



## Question 5: Probability and Proportions (10 min)

- (i) Estimate the probability for each of the events A, B, C, D, and E listed below, and write your answers into the table.

	Probability
A name is picked at random from a list of 50 girls and 50 boys. A = A girl's name is picked.	
A fair coin is tossed once. B = A head is the outcome.	
One card is drawn at random from a pack of playing cards. C = The card is a diamond.	
A day is chosen at random from a list of the days of the week. D = The name of the day contains the letter a.	
One number is picked at random from the set {1, 2, 3, 4, 5, 7, 11, 13}. E = The number chosen is a prime number.	

- (ii) Place the letter for each of the events at the most appropriate position on the probability scale below.



- (iii) Write down another event that you think has a probability similar to that of C in the table above.


- (iv) Write down another event that you think has a probability similar to that of D in the table above.


Question 6: Algebra

a) Simplify  $6x - xy + 5x - 7xy$

Answer: \_\_\_\_\_

b) If  $a = 4$  and  $b = 2$

Find the value of  $6a - 2ab$

Answer: \_\_\_\_\_

c) Find the value of  $x$ :

$$5x + 2 = 4x + 8$$

d) Remove the brackets:

$$2(x+4) - 3(x - 4)$$

Answer: \_\_\_\_\_

e) Multiply out the brackets and simplify:

$$(5x - 2)(4x + 3) \quad \text{Answer: } \underline{\hspace{4cm}}$$

**Question 7: Percentages.**

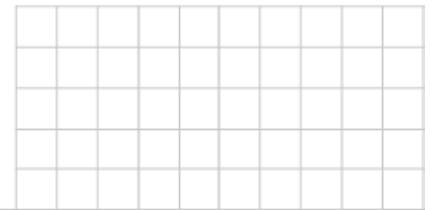
a) First, write the percentages as fractions. Then, calculate the percentage of each number.

- i) 20% of 60
- ii) 90% of 1200
- iii) 60% of 25

b)

**Shop B** offers  $\frac{1}{4}$  off the usual price of the bike.  
Fill in the table to show the “special offer” price of the bike in this shop.

Usual Price:	€320
“Special offer” price:	

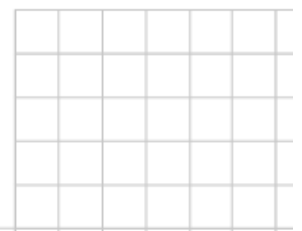


c)

Daniel wants to buy a bike. The usual price of the bike is €320.  
The bike is on “special offer” in three different shops.

(a) **Shop A** offers 10% off the usual price of the bike.  
Fill in the table to show the “special offer” price of the bike in this shop.

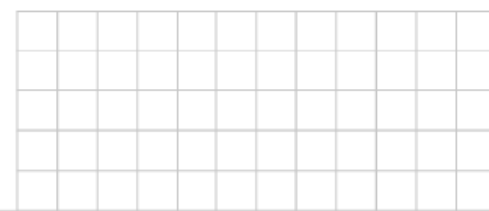
Usual Price:	€320
“Special offer” price:	



d)

In **Shop C**, Daniel can pay €60 now, plus €20 at the end of each month for 12 months.  
Fill in the table to show the “special offer” price of the bike in this shop.

Usual Price:	€320
“Special offer” price:	







Question 9: Data (10 minutes)

What is primary data?

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What is secondary data?

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What is discrete data?

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What is continuous data?

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What is categorical data?

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b) A new variety of soup “Tayto Cheese and Onion”, is to be launched by a leading manufacturer. They wish to know if it will be popular and sell well. People are asked to try a free sample and comment on their impression. Write unbiased questions for your questionnaire. State where you will carry out your research.