



Annual Examinations for Middle Schools 2024

YEAR 8

**MATHEMATICS
MAIN PAPER**

TIME: 1h 40min

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	Total Main	Non- Calc	Total
Mark																

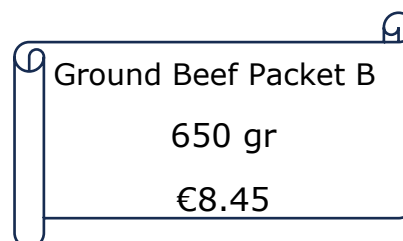
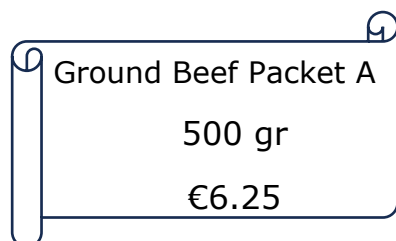
DO NOT WRITE ABOVE THIS LINE

Name: _____

Class: _____

**Calculators are allowed but all necessary working
must be shown. Answer All questions.**

1. The same brand of ground beef come in packets of different sizes.



a) What is the cost of 100g of packet A?

Ans: _____

b) What is the cost of 100g of packet B?

Ans: _____

c) Which packet of ground beef is of better value for money?

Ans: _____

(5 marks)

2. a) i) Express 540 as a product of prime factors.

Ans: _____

- ii) Write the answer of part (i) in index form.

Ans: _____

- b) Work out the Least Common Multiple of 27, 36 and 60.

Ans: _____

(4 marks)

3. a) New York is 10 hours behind Rome.

The time in Rome is 4:45pm. What is the time in New York?

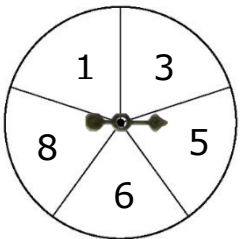
Ans: _____

- b) Fill in the table below.

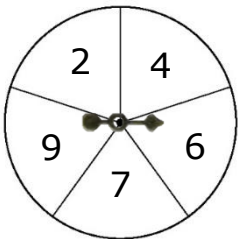
	Time in words	Time in 12hr clock	Time in 24hr clock
i)	Half past eight in the morning		
ii)			21:05

(6 marks)

4. Noah spins two fair spinners A and B. He multiplies the two numbers.



SPINNER A



SPINNER B

Noah writes the possible outcomes in the possibility space below.

a) Complete the possibility space.

		SPINNER A				
SPINNER B	x	1	3	5	6	8
	2	2	6			16
	4		12	20	24	32
	6	6	18		36	
	7			35	42	56
	9	9		45		

b) Use the possibility space to work out the probability that Jack gets:

i) an odd number = _____

ii) a square number = _____

iii) a multiple of 6 = _____

(5 marks)

5. a) Anna bought a new mobile phone for €760.
After one year, she sold it at a loss of 15%.
i) How much money did she lose?

Ans: _____

- ii) At what price did Anna sell her mobile phone?

Ans: _____

- b) In 2017, Daniel got 40 marks in his French exam.
In 2018, his mark increased by 18. Calculate the percentage increase.

Ans: _____

(6 marks)

6. a) Work out the value of $\frac{ab}{b+c}$ when $a = -6$, $b = 8$ and $c = 4$.

Ans: _____

- b) Make x the subject of the formula.

$$y = mx + c$$

Ans: _____

c) Solve the equation: $4(3p - 5) = 136$

Ans: _____

(8 marks)

7. a) Giulia spends €3.50 on snacks, €1.50 on stationery and €2.50 on a gift.
Write the ratio of the money spent on snacks : stationery : gift, in its simplest form.

Ans: _____

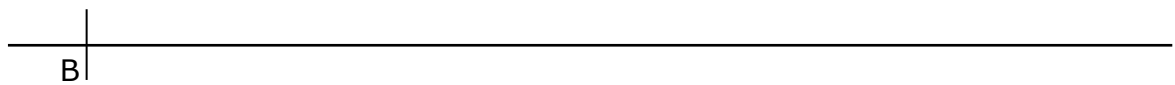
- b) Share €360 amongst three persons in the ratio 6 : 4 : 5.
Calculate the smallest amount received.

Ans: _____

(5 marks)

8. In questions a) and b) use ruler and compasses only to:

a) i) Construct triangle BCD in which $BC = 9\text{ cm}$, $CD = 7\text{ cm}$ and $BD = 5.5\text{ cm}$



ii) Measure $\angle BCD$.

$\angle BCD =$ _____

b) Construct a hexagon of side 6 cm .

(7 marks)

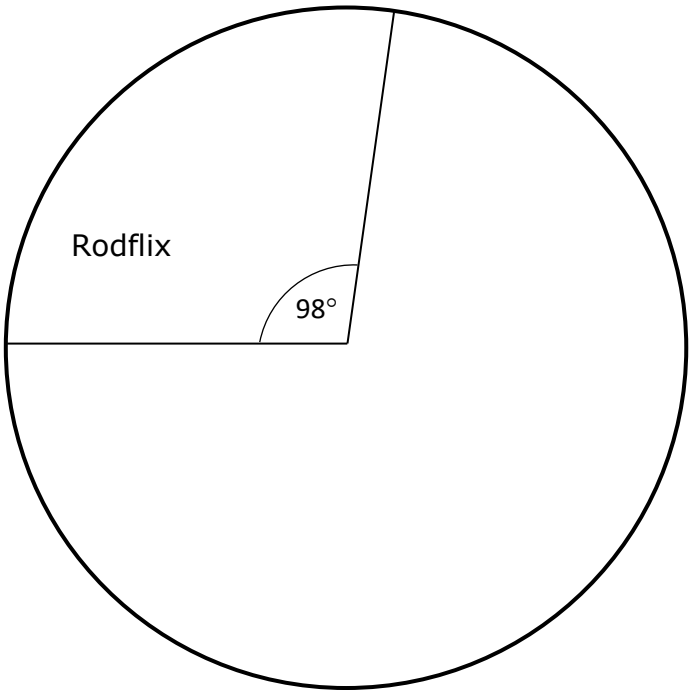
9. The following frequency table shows the results of a survey about the favourite online games of a group of youths.

Favourite Online Game	Minedigger	Football 2024	SackMan	Grand Racing	Rodflix
Frequency	36	45	30	20	49

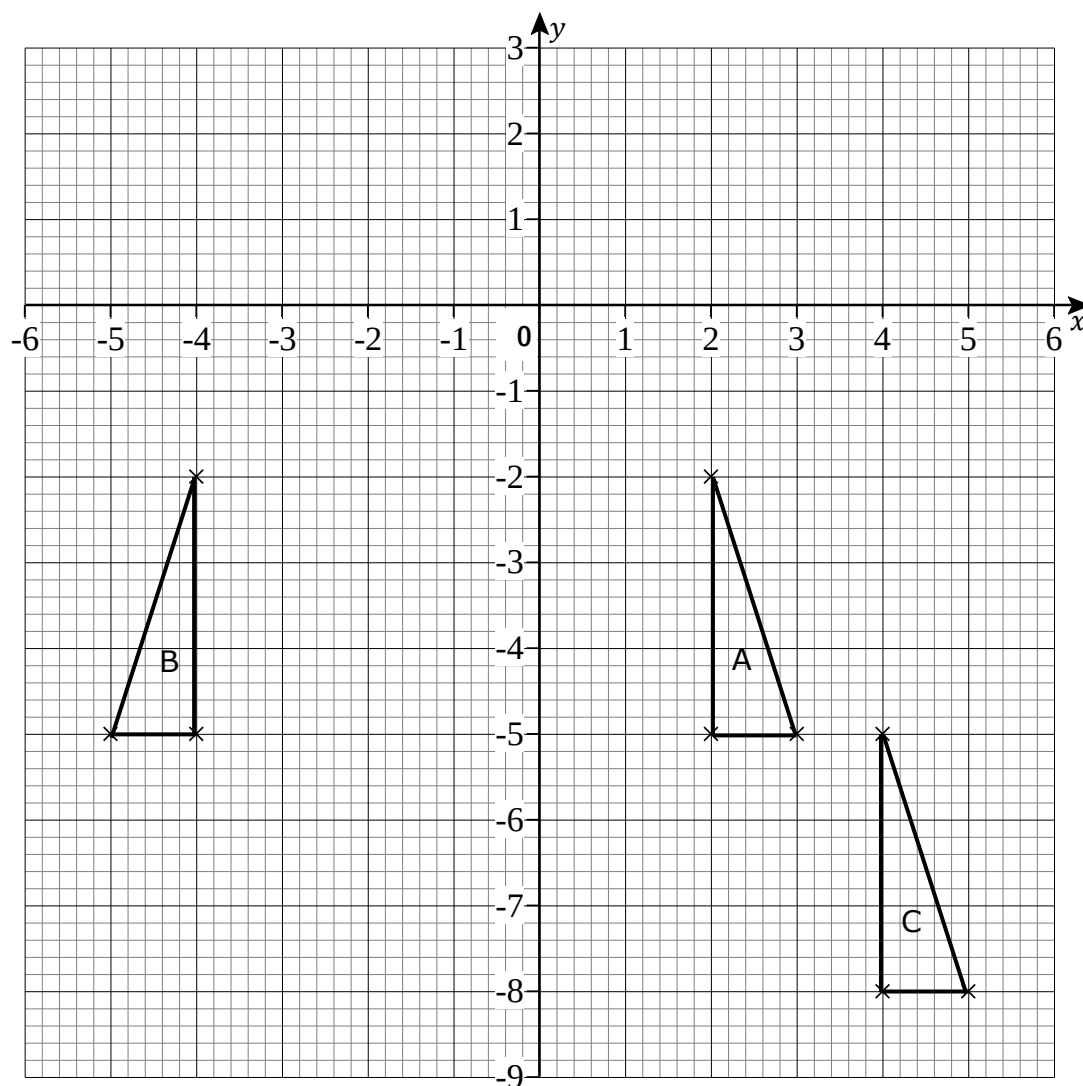
- a) How many youths participated in the survey?
- Ans: _____
- b) Calculate the angle of each sector of the pie chart that represents the information in the frequency table.

Favourite Online Game	Minedigger	Football 2024	SackMan	Grand Racing	Rodflix
Angle				40°	98°

- c) Complete the pie chart.



10.



a) Rotate triangle A by 180° about the point (2, -2). Label the image D.

b) The transformation which maps A to B is a _____ in the line _____.

c) The transformation which maps A to C is a _____ by $\left(\begin{array}{c} \\ \end{array} \right)$.

(6 marks)

11. Calculate the size of each marked angle, giving reasons for your answers.

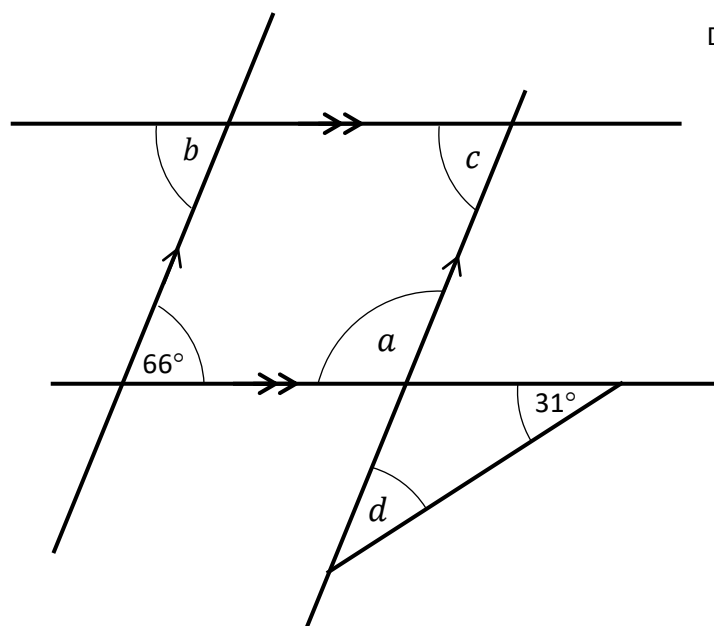


Diagram not drawn to scale

$a =$ _____ (_____)

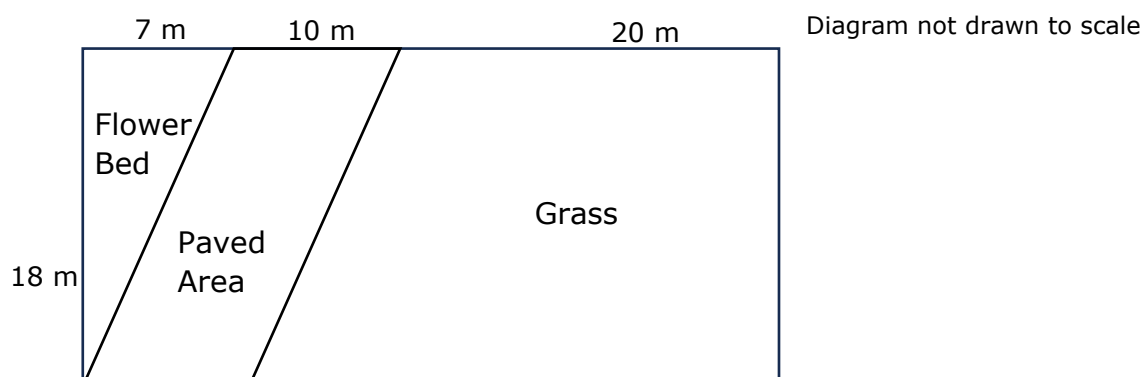
$b =$ _____ (_____)

$c =$ _____ (_____)

$d =$ _____ (_____)

(8 marks)

12. The diagram below shows a sketch of a public garden in the form of a rectangle.



a) Calculate the area of the paved parallelogram.

Ans: _____

b) Calculate the area of the triangular flower bed.

Ans: _____

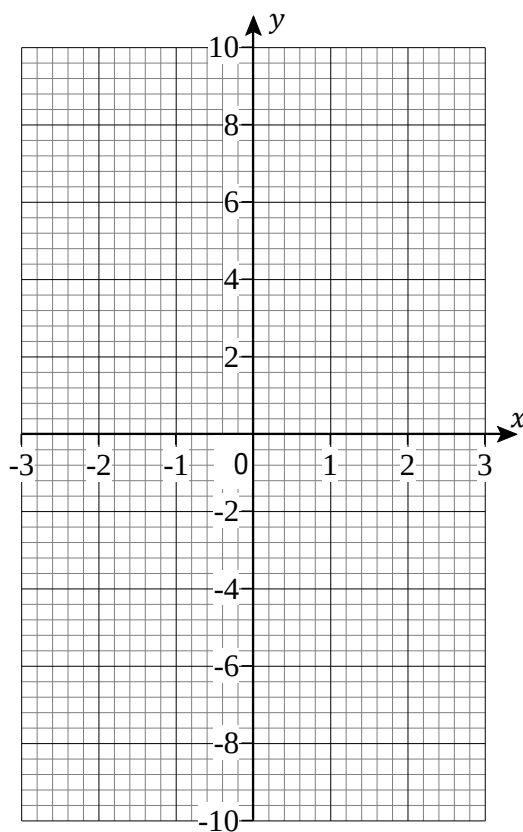
c) Calculate the area of the grass.

Ans: _____

(8 marks)

13. a) Complete the table for the equation $y = 4x$.

x	-2	-1	0	1	2
$y = 4x$			0		



b) Draw the line $y = 4x$.

c) Use your graph to find:

i) the value of x when $y = 2$

$x =$ _____

ii) the value of y when $x = -1.5$

$y =$ _____

(6 marks)

END OF PAPER

BLANK PAGE