FOR THE EXAMINER

EXAM. NUMBER:

Total Marks

Coimisiún na Scrúduithe Stáit
State Examinations Commission

JUNIOR CERTIFICATE EXAMINATION, 2004

MATHEMATICS – FOUNDATION LEVEL – (300 marks)

THURSDAY, 10 JUNE - MORNING, 9.30 TO 11.30

Time: 2 hours

Attempt **ALL** questions. Each question carries 50 marks.

Answers and supporting work should be written into the boxes provided.

Extra pages and graph paper can be obtained from the Superintendent, if needed.

The symbol ✍ indicates that supporting work must be shown to obtain full marks.

Make and model of calculator used:

For the Superintendent/Examiner use only:

Centre Stamp

Question	Mark
1	
2	
3	
4	
5	
6	
Total	
Grade	

1. **(a)**

(i) $75 + 52 =$

(ii) $75 - 52 =$

(b)

(i) $468 \div 6 =$

(ii) $2314 \times 5 =$

(iii) $\sqrt{49} =$

(iv) $4^3 =$

(c)

(i) Write down the nearest whole number to $7 \cdot 8$.

Answer _____

(ii) Write down the nearest whole number to $12 \cdot 3$.

Answer _____

(iii) Use your answers to estimate the value of $7 \cdot 8 \times 12 \cdot 3$.

Estimate _____

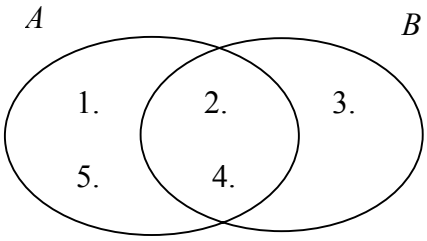
(iv) Find the exact value of $7 \cdot 8 \times 12 \cdot 3$.

Exact value _____

2. **(a)** A "take-away" meal costs €6·80.

I pay with a €10 note. How much change do I get?

(b)



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

(ii) $B = \{\quad , \quad , \quad \}$

(iii) $A \cap B = \{\quad , \quad \}$

(iv) $A \cup B = \{\quad , \quad , \quad , \quad , \quad \}$

Part (c) on next page

(c) An electricity bill gives the following details:

	Present Reading	Previous Reading
Units	36 551	35 751

Find

(i) the number of units used

(ii) the cost of the electricity used if each unit costs $10 \cdot 75$ cent

(iii) the total cost when VAT at $13 \cdot 5\,\%$ is added to the cost of the electricity used.

3. **(a)** Write down the mode of the following numbers

6, 5, 7, 6, 6, 4, 3.

Mode = _____

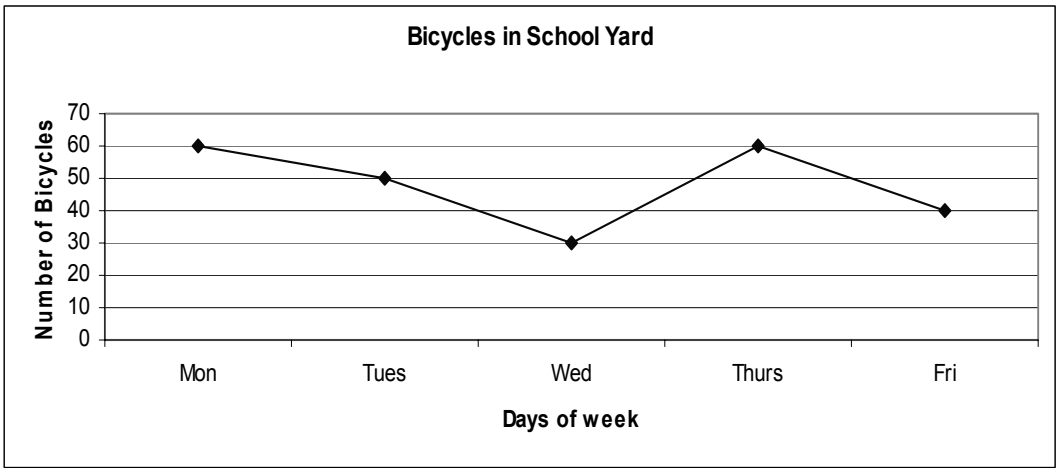
(b) The pupils in a class were asked what their favourite fruit was.
The table shows the results.

Favourite Fruit	Oranges	Apples	Bananas	Pears
Number of Pupils	10	13	4	3

Draw a bar chart to represent the results.
Use the grid to draw your bar chart.

Part (c) on next page

(c) The number of bicycles in a school yard during one week (Monday to Friday) is shown on the trend graph below.



(i) How many bicycles were in the school yard on Wednesday?

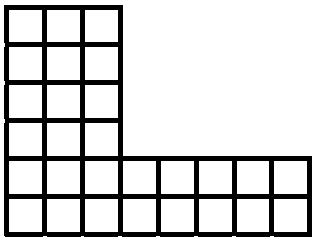
(ii) What was the total number of bicycles in the school yard during the week?

(iii) What percentage of the total number of bicycles was in the school yard on Wednesday?

4. **(a)** A bus leaves Dublin at 10:05 and arrives in Athlone at 12:40.

How long does the journey take?

(b) The plan of a garden is shown below.
The area of each box is 4 m^2.



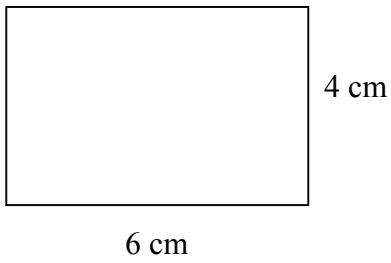
(i) How many boxes are there?

(ii) Calculate the area of the garden in m^2.

Part (b) continues on next page

(iii) Flowers are planted in three quarters of the garden.
Find the area of the garden planted with flowers.

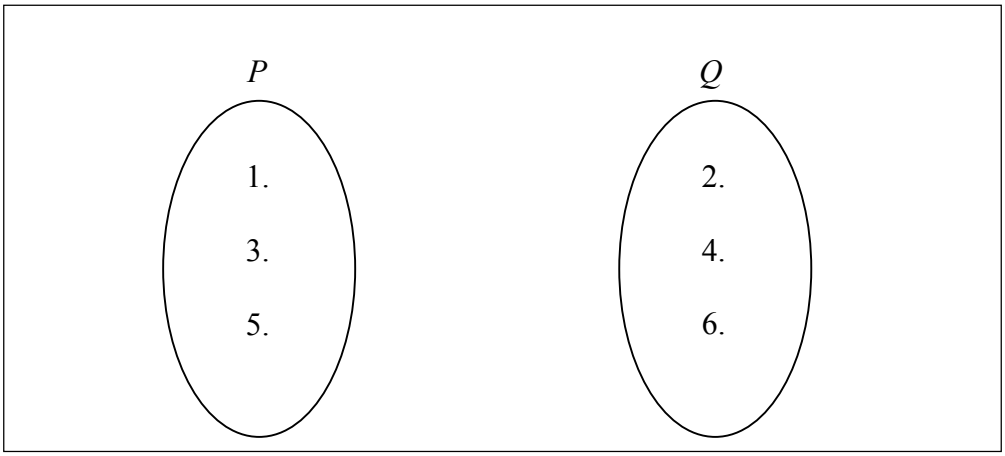
(c) **(i)** A rectangle measures 6 cm by 4 cm.
Find the perimeter of the rectangle.



Part (c) continues on next page

(ii) The radius of a cylinder is 6 cm and its height is 10 cm.
Calculate the volume of the cylinder, taking $\pi = 3 \cdot 142$.

5. **(a)** Draw arrows from P to Q to show the relation "is greater than".

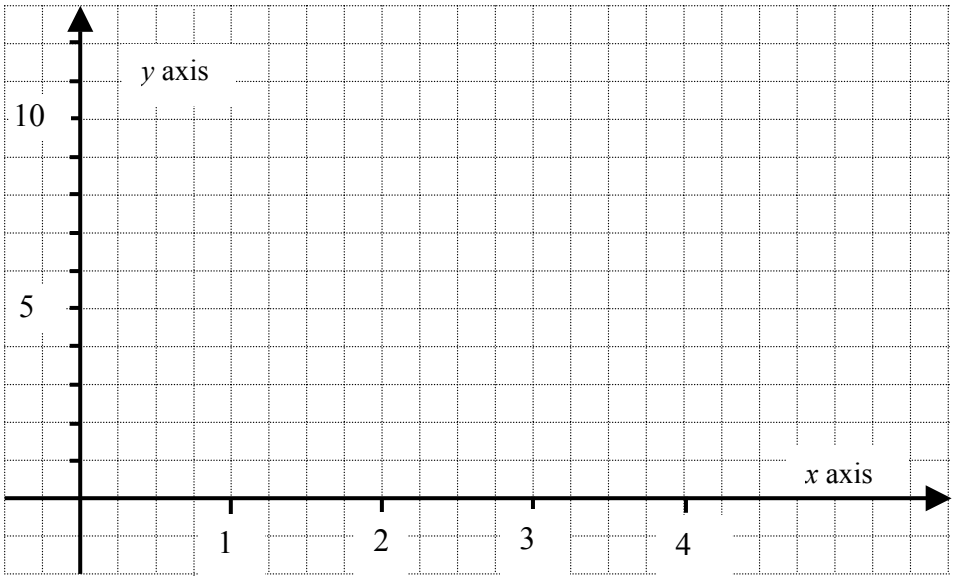


Part (b) on next page

(b) **(i)** Given that $y = x + 5$, complete the table below:

x	1	2	3	4
y		7		

(ii) Using your answers from **(i)** draw the graph of $y = x + 5$ from $x = 1$ to $x = 4$.

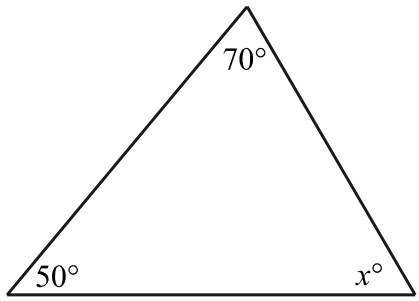


(c) **(i)** Find the value of $x^2 + 4x + 2$ when $x = 3$.

(ii) Solve for x:

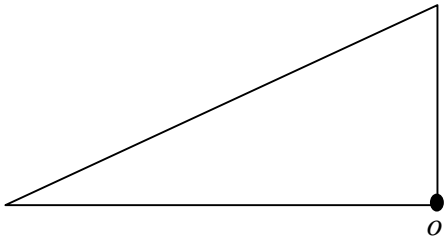
$$3(x - 4) = 9$$

6. **(a)** Calculate the value of x in the diagram.



$x =$

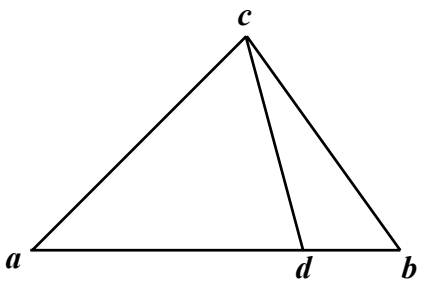
(b) Construct the image of the triangle under the central symmetry in the point o.



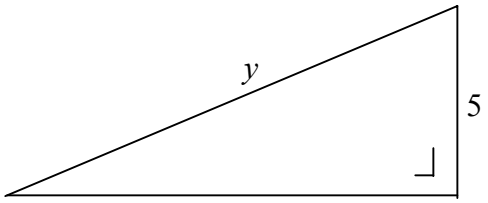
(c) **(i)** There are three different triangles in the diagram.
One triangle is *cad.*
Write down the names of the other two triangles.

Answer _____

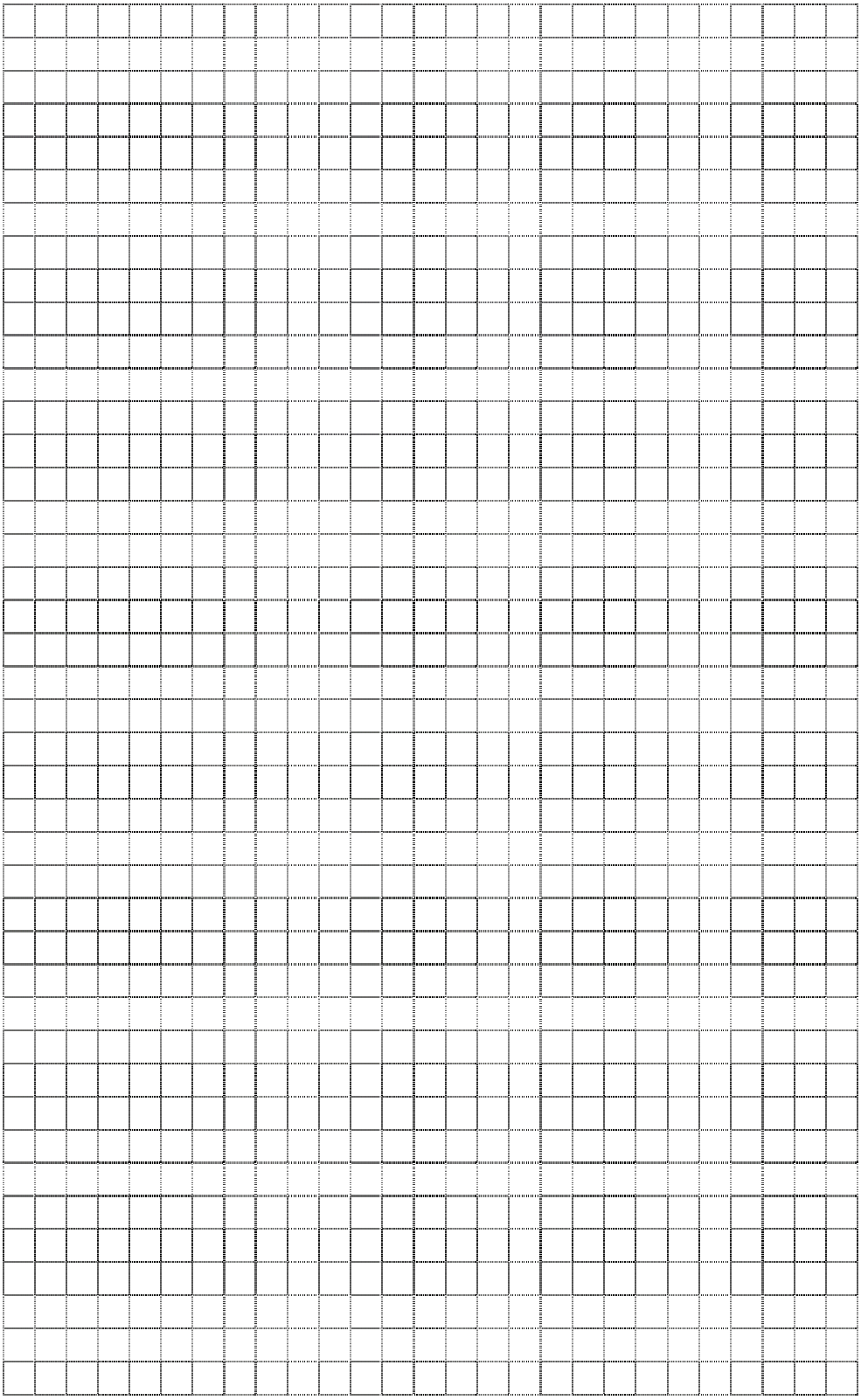
Answer _____



(ii) Use the Theorem of Pythagoras to find the length of the side marked *y* in the right-angled triangle.



Space for extra work



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