

AN ROINN OIDEACHAIS
JUNIOR CERTIFICATE EXAMINATION, 1994

S.31
21003

MATHEMATICS - FOUNDATION LEVEL

THURSDAY, 9 JUNE - MORNING, 9:30 to 11:30

Attempt all questions.
All questions are of equal value.

Marks may be lost if necessary work is not shown.
Mathematics Tables may be obtained from the Superintendent.

1. Prize money of IR£8604 is divided equally between four people.
How much does each receive?
2. Find the total cost of the bill below and the change received out of IR£5.

Flour	IR£0.94
Sugar	IR£0.82
Butter	IR£1.40
Milk	IR£0.98

3. Some of the train time-table from Dublin to Galway is shown below.

Departs Dublin	Arrives Galway
0755	1105
1100	1350

Write down the length, in hours and minutes, of each journey from Dublin to Galway.
The train leaving Dublin at 1410 takes $2\frac{3}{4}$ hours to reach Galway.
At what time does this train arrive in Galway?

4. On a map, Millstreet is 5.2 cm from Dublin.
The scale of the map is

$$1 \text{ cm} = 45 \text{ km.}$$

Calculate the distance, in km, between Millstreet and Dublin.

5. A book was bought for IR£7.50. It was sold a week later for IR£9.
 - (i) Calculate the profit.
 - (ii) Express this profit as a percentage of the buying price of the book.

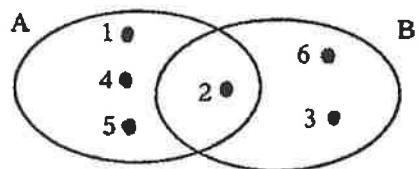
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6. IR£150 was invested for two years at 6% per annum compound interest.
Find the amount at the end of two years.

7. A car travels a distance of 96 km in 1.5 hours.

Find the speed of the car in km/hr.

8. Copy the Venn diagram into your answerbook.
List the elements in

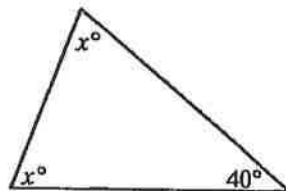


(i) $A \cup B$

(ii) $A \cap B$.

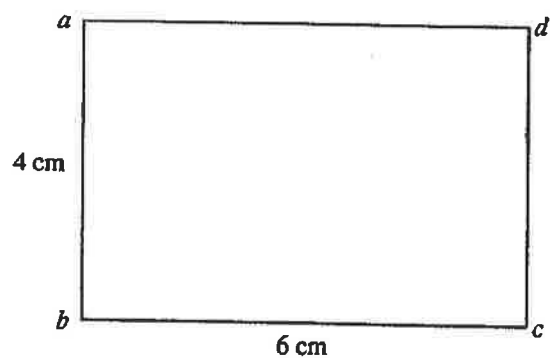
9. The measures of the three angles of a triangle sum to 180° .

Calculate the value of x .



10. (i) Calculate the area of the rectangle $abcd$ where
 $|ab| = 4$ cm and
 $|bc| = 6$ cm.

- (ii) Calculate the area of the triangle abc .



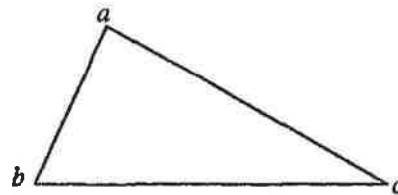
11. Find the value of

(i) $3x + 5y$ when $x = 2$ and $y = 4$

(ii) $x^2 + 2x + 5$ when $x = 3$.

12. Plot the points (1, 3), (2, 4) and (3, 5) on graph paper. Join these points on your graph paper to form a line.
These points lie on the graph of $y = x + 2$.
Find the value of y when $x = 4$.

13. Copy the diagram into your answerbook.
Draw the image of triangle abc under the translation \vec{bc} .



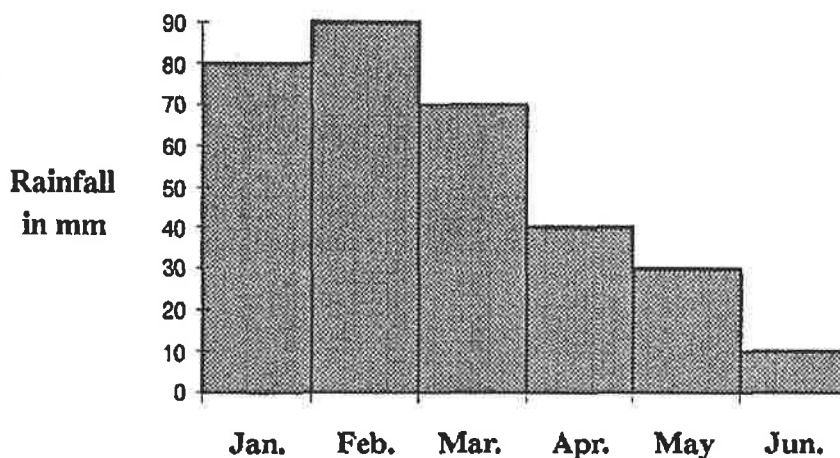
14. Use your tables, if you wish, pages 20-25, to calculate

- (i) the square of 12
(ii) the square root of $6\frac{1}{4}$.

15. A person has a gross yearly pay of IR£14 500 and tax-free allowances of IR£8320.

- (i) Find the taxable pay (i.e., IR£14 500 minus tax-free allowances) for the year.
(ii) Income tax is paid at the rate of 27% in the IR£ on the taxable pay.
Calculate the amount of tax paid in the year.

16. The following bar-chart shows the rainfall measured in millimetres (mm) at a certain weather station for the first six months of a year.



Using the bar chart

- (i) name the month with the highest rainfall
(ii) find the difference in the rainfall measured during the month of March and the month of May
(iii) find the average (mean) rainfall per month.

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17. A team played 24 games in a year. The results were as follows:

games won	12
games drawn	8
games lost	4

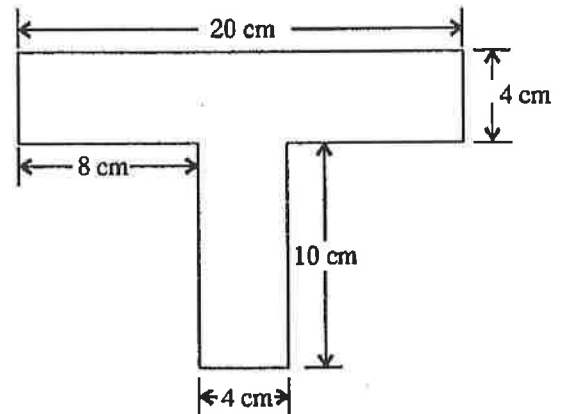
Represent this data on a pie-chart.

Find the total angle for games won and games lost.

Note: 24 games represent 360° .

18. A piece of cardboard is in the shape of the letter T as shown.

- (i) Find the length of the perimeter of the shape shown.
- (ii) Calculate the area of the shape shown.



19. A telephone bill is made up of the rental of IR£22.20 and telephone calls as follows:

280 units at 11p per unit.

- (i) Find the cost of the telephone calls.
- (ii) Find the cost of the rental plus calls.
- (iii) VAT is charged at 20% on the rental and calls. Find the amount of VAT paid.

20. A rectangular tank has a volume of 4400 cm^3 . A cylinder has a height of 14 cm and radius length of 5 cm.

- (i) Calculate the volume of the cylinder, taking $\pi = \frac{22}{7}$.
- (ii) How many such cylinders full of water are needed to fill the tank?

