

AN ROINN OIDEACHAIS AGUS EOLAÍOCHTA

21010

JUNIOR CERTIFICATE EXAMINATION, 1999

MATHEMATICS - FOUNDATION LEVEL

THURSDAY, 10 JUNE - MORNING, 9.30 to 11.30

Attempt all questions.

All questions are of equal value (15 marks each).

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

1. A ticket for the cinema costs IR£3.75.
 - (i) How much will 4 tickets cost?
 - (ii) If I pay for 4 tickets with a IR£20 note, how much change will I get back?

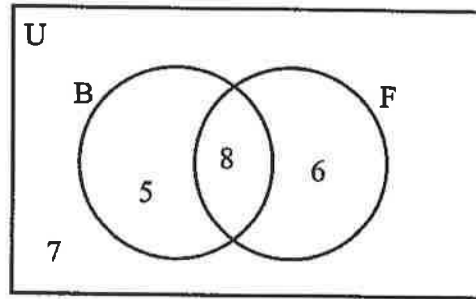
2. John received a bill for IR£267 for repairs to his car.
He paid one third of the bill. How much did he then owe?

3. Find the value of

$$\frac{1}{2} + \frac{1}{4} + \frac{3}{8}$$

4. A computer game was bought for IR£60. It was sold later at a profit of 20%.
What was its selling price?

5. U is the set of pupils in a class.
 B is the set of pupils who play basketball.
 F is the set of pupils who play football.



- (i) Write down the number of pupils who play neither of the two games.
- (ii) How many pupils are in the class?
- (iii) How many pupils play basketball?
6. A bus left Dublin at 1340 hours and it arrived in Athlone at 1645 hours.
- (i) How many hours and minutes did the journey take?
- (ii) The bus stopped once during the journey for a break of 30 minutes. For how many hours and minutes was the bus moving?
7. A truck travels at an average speed of 35 km/h.
- How long does it take the truck to complete a journey of 140 km?
8. The following table shows the number of children who attended a swimming class on each of five days.
- | Day | Monday | Tuesday | Wednesday | Thursday | Friday |
|--------------------|--------|---------|-----------|----------|--------|
| Number of children | 16 | 12 | 14 | 15 | 8 |
- (i) Draw a bar chart to represent this information.
- (ii) Find the average (mean) number of children who attended per day.
9. 60 people were asked what type of heating fuel they used.
- 15 said coal, 20 said turf and the rest said oil.
- (i) How many said that they used oil?
- (ii) Draw a pie chart to show this information and state the size of each of the three angles.

10. (i) Find the value of x for which $2x - 3 = 9$.
- (ii) Find the value of $5x + 4y$ when $x = 1$ and $y = 2$.

11. An electricity bill shows the following:

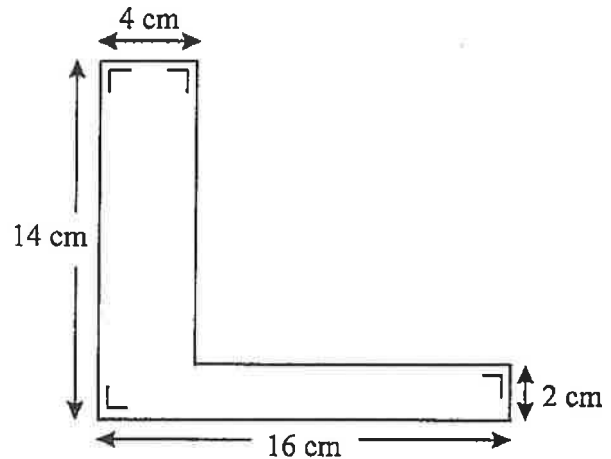
Meter Readings	
Present	Previous
94670	94150

- (i) How many units were used?
- (ii) Find the total cost if each unit costs 7.5p?
12. (i) Use the Tables, page 24 - 25, to find $\sqrt{63.4}$.
- (ii) Use the Tables, page 20 - 21, to find $(3.42)^2$.
- (iii) Write down the value of $\sqrt{63.4} + (3.42)^2$.

13. Calculate

- (i) the length of the perimeter
- (ii) the area

of the shape in the diagram.



14. (i) Write $\frac{9}{100}$ as a decimal.
- (ii) Write $\frac{3}{4}$ as a decimal.

15. Ann invests IR£800 for 2 years at 4% per annum compound interest.

How much interest does she get in total at the end of the 2 years?

16. The inside of a jug is in the shape of a cylinder of height 14 cm and radius 4 cm.

(i) Calculate the volume of milk needed to fill the jug.

(Note: Use the formula $\pi r^2 h$ and take $\pi = \frac{22}{7}$.)

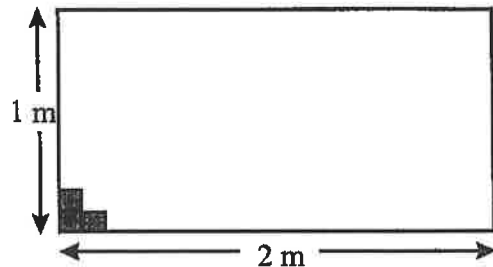
(ii) The jug is filled from 1 litre of milk. How much milk is left over?

(Note: 1 litre = 1000 cm³.)

17. A rectangular space on a bathroom wall measures 1 m by 2 m.

It is to be covered with square tiles, each of which measures 10 cm by 10 cm.

How many tiles will be needed?



18. On graph paper, draw the x axis and the y axis showing the scale from -3 to $+3$ on each.

Plot and join the points $(1, 3)$, $(-2, 0)$ and $(-3, -1)$ to form a line.

19. Using a ruler and compass, draw a triangle with sides of lengths 6 cm, 3 cm and 5 cm.

Use a protractor to measure the size of each angle and write down the three measurements.

20. Copy the rectangle $abcd$ into your answerbook.

Construct its image under the translation \vec{ab} .

