



# Coimisiún na Scrúduithe Stáit State Examinations Commission

---

**LEAVING CERTIFICATE EXAMINATION, 2011**

---

**MATHEMATICS – FOUNDATION LEVEL**

**PAPER 1 ( 300 marks )**

---

**FRIDAY, 10 JUNE – AFTERNOON 2:00 to 4:30**

---

Attempt **QUESTION 1** (100 marks) and **FOUR** other questions (50 marks each).

---

**WARNING: Marks will be lost if all necessary work is not clearly shown.**

**Answers should include the appropriate units of measurement,  
where relevant.**

---

1. (i) Find  $\sqrt{132.9}$ , correct to two decimal places.

(ii) Find the exact value of  $14.32 - 2.6 \div 0.4$ .

(iii) Find  $(4.2)^3 - (2.8)^2$ , correct to one decimal place.

(iv) A concert hall has 1200 seats.

For one concert 1050 seats were occupied.

What percentage of the seats were occupied?

(v) Find the value in euro of 600 South African rand given that  $\text{€}1 = 9.674$  South African rand.

(vi) Find the number of seconds in 24 hours.

(vii) Find the exact value of  $\frac{1}{(0.5)^2} + \frac{1}{(0.25)^2}$ .

(viii) Write  $\frac{8}{11} - \frac{3}{7}$  as a decimal, correct to three decimal places.

(ix) Find  $\left(\frac{37.6 + 5.92}{0.85}\right)^2$ , correct to the nearest integer.

(x) Find  $\frac{(3.68 \times 10^5) - (2.1 \times 10^4)}{3.8 \times 10^3}$ , correct to three significant figures.

2. (a) (i) Change 6·3 kilometres to metres.  
(ii) Change 8245 grams to kilograms.
- (b) The following information was used to calculate the cost of electricity used by Emma.  
Previous meter reading: 72 010  
Present meter reading: 73 485  
Cost per unit: 15 cent.
- (i) Calculate the number of units of electricity used between these two readings.  
(ii) Calculate the cost of the units used.  
(iii) A standing charge of €24·75 and VAT of €33·21 are added to the cost of the units.  
Find the total cost of Emma's electricity bill.
- (c) Sam earns €550 a week. His rate of tax is 20% and he has tax credits of €75 a week.  
(i) How much tax does Sam pay each week?  
(ii) Sam also pays other deductions of €91·50 each week.  
Find his weekly take-home pay.  
(iii) What percentage of his total pay does Sam take home each week?
3. (a) Seán estimates that he will get €200 by selling his DVDs.  
He actually gets €184.  
(i) Find the error in the estimate.  
(ii) Calculate the percentage error, correct to one decimal place.
- (b) A raffle ticket costs €1. Caoimhe pays 40 cent and Aoife pays 60 cent of the cost.  
They share a prize in the ratio of the amount paid by each.  
Caoimhe gets €160.  
(i) How much does Aoife get?  
(ii) How much is the total prize they share?
- (c) Tom bought a television set for €1100.  
At the end of the first year the television set is worth €935.  
(i) Find the annual rate of depreciation.  
(ii) At this rate of depreciation, how much will the television set be worth at the end of 3 years?  
Give your answer correct to the nearest euro.



4. (a) Solve for  $x$

$$3x - 7 = 6x + 8.$$

- (b) Solve the simultaneous equations

$$x + 2y = 4$$

$$2x + 3y = 5.$$

- (c) The cost of a blue mobile phone is €12 less than the cost of a pink mobile phone.  
Let  $x$  be the cost of a pink mobile phone.

- (i) Write an expression in  $x$  for the cost of a blue mobile phone.

The total cost of 2 pink and 4 blue mobile phones is €840.



- (ii) Write this information as an equation in  $x$ .

- (iii) Solve this equation to find the cost of a pink mobile phone.

5. (a) (i) Write down all the whole number factors of 24.

- (ii) List which of these numbers are multiples of 3.

- (b) (i) Solve the quadratic equation  $x^2 + 4x - 12 = 0$ .

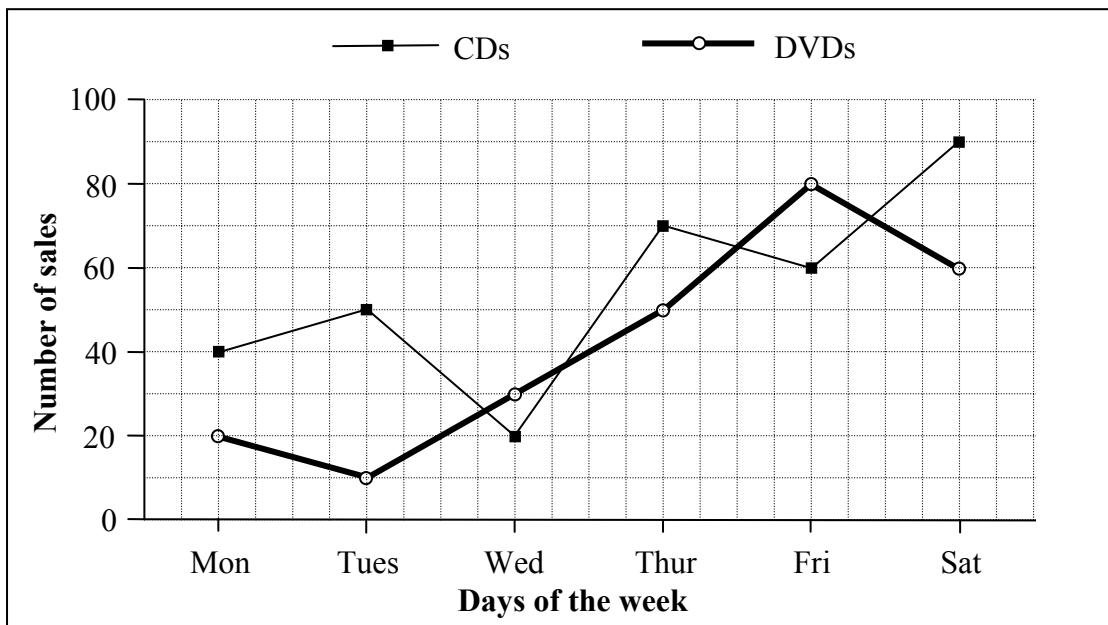
- (ii) Solve the quadratic equation  $3x^2 - 6x + 2 = 0$ , correct to two decimal places.

- (c) (i) Solve  $3x + 6 < 24$ ,  $x \in \mathbb{Z}$ .

- (ii) Solve  $6 - 4x \leq 10$ ,  $x \in \mathbb{Z}$ .

- (iii) Write down all the values of  $x$  which satisfy both of the above inequalities.

6. A music shop sells CDs and DVDs. The graph shows the number of each sold over six days. For example, on Tuesday, 50 CDs and 10 DVDs were sold.



- (i) How many CDs were sold on Friday?
- (ii) How many **more** CDs than DVDs were sold on Saturday?
- (iii) On which days of the week was the number of DVDs sold greater than the number of CDs sold?
- (iv) Find the average number of CDs sold per day.
- (v) The shop sells each CD for €8 and each DVD for €12.  
Find, in euro, the total amount of sales over the six days.

7. Draw the graph of the function

$$f : x \rightarrow 2x^2 - x - 5, \text{ for } -3 \leq x \leq 3, x \in \mathbb{R}.$$

Use your graph to estimate

- (i) the value of  $f(2.5)$
- (ii) the minimum value of  $f(x)$
- (iii) the values of  $x$  for which  $f(x) = 7$
- (iv) the range of values of  $x$  for which  $f(x)$  is increasing.

**Blank Page**

**Blank Page**

**Blank Page**