# Leaving Cert - Revision Sheet 1

## Algebra

1. Solve the following equations

   (a) \[ 5x - 2 = 40 - x \]

   (b) \[ 3(x - 1) = 18 - 5(x + 1) \]

## Co-ordinate Geometry

2. Plot the points A (2,4) and B (-2,1) on the co-ordinate diagram.

Using whatever method you like, calculate the following:

   (a) Slope of AB

   (b) Mid-point of [AB]

   (c) \(|AB|\)
3. Circle the correct type of data in each case

(a) The number of window in a house  Numerical / Categorical
(b) The colour of the front doors of houses on the road  Nominal / Ordinal
(c) Number of goals scored by a hockey team in each match  Discrete / Continuous
(d) The height of each member of a basketball team  Discrete / Continuous
(e) The height and weight of each member of a rowing team  Univariate / Bivariate

A company carried out a survey to see if people like their product  Primary / Secondary

Patterns / Sequences

4. For the sequence given by \( T_n = 2n - 1 \),
   (a) Calculate the first 5 terms of the sequence

(b) What type of sequence is this? Give a reason for your answer.

5. For the sequence: 6 13 20 27 34
   (a) Write down the values of \( a \), the start term, and \( d \), the common difference

(b) Write down \( T_n \) for this sequence
(c) Hence, find which term of this sequence is 90

**Numbers**

6. 3/7 of a sum of money is €360. Find the sum of money

7. Divide €1,200 in the ratio 11:6:3

8. A company buys a product for €144 and sells it for €150. Calculate the percentage profit. Give your answer to 2 significant figures.

**Probability**

9. Tickets numbered 1 to 15 are placed in a box. If one ticket is drawn at random, find the probability of getting:

<table>
<thead>
<tr>
<th>(a) The number 4</th>
<th>(b) An even number</th>
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<td>(c) A two-digit number</td>
<td>(d) A multiple of 3</td>
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10. A letter is chosen at random from the letters of the word *HAPPINESS*. What is the probability that the letter is:

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**Geometry**

11. Write down the size of the angles marked with a letter in each of the following:

- In the first diagram, angles are marked with 64° and 1.
- In the second diagram, angles are marked with 105° and 30°.
Leaving Cert - Revision Sheet 1

Algebra

1. Solve the following equations

(a) \[5x - 2 = 40 - x\]
\[5x + x = 42\]
\[6x = 42\]
\[x = 7\]

(b) \[3(x - 1) = 18 - 5(x + 1)\]
\[3x - 3 = 18 - 5x - 5\]
\[8x = 16\]
\[x = 2\]

Co-ordinate Geometry

2. Plot the points A (2,4) and B (-2,1) on the co-ordinate diagram.

Using whatever method you like, calculate the following:

(a) Slope of AB
\[m = \frac{\text{rise}}{\text{run}} = \frac{3}{4}\]

(b) Mid-point of [AB]
\((0, 2.5)\)

(c) \(|AB|\)
\[d = \sqrt{3^2 + 4^2}\]
\[d = 5\]
\[|AB| = 5\]
Statistics

3. Circle the correct type of data in each case

(a) The number of windows in a house
   Numerical / Categorical
   Nominal / Ordinal
   Discrete / Continuous

(b) The colour of the front doors of houses on the road
   Nominal / Ordinal
   Discrete / Continuous
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(c) Number of goals scored by a hockey team in each match
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(d) The height of each member of a basketball team
   Continuous

(e) The height and weight of each member of a rowing team
   Continuous

(f) A company carried out a survey to see if people like their product
   Primary / Secondary

Patterns / Sequences

4. For the sequence given by \( T_n = 2n - 1 \)
   (a) Calculate the first 5 terms of the sequence
      \[ T_1 = 2(1) - 1 = 1, \quad T_2 = 2(2) - 1 = 3, \quad T_3 = 2(3) - 1 = 5 \]

   (b) What type of sequence is this? Give a reason for your answer.
      \[ \text{LINEAR/ ARITHMETIC} \]
      \[ \text{1st difference is constant} \]

5. For the sequence: 6 13 20 27 34
   (a) Write down the values of \( a \), the start term, and \( d \), the common difference
      \[ a = 6, \quad d = 7 \]

   (b) Write down \( T_n \) for this sequence
      \[ T_n = 7n - 1 \]
(c) Hence, find which term of this sequence is 90

\[ T_n = 7n - 1 \]

\[ T_1 = 7 - 1 = 90 \]

\[ 7n = 91 \]

\[ n = 13 \]

13\textsuperscript{th} term

Numbers

6. \(\frac{3}{7}\) of a sum of money is €360. Find the sum of money

\[ \frac{1}{7} \times 360 = 120 \]

\[ \frac{3}{7} \times 360 = 180 \]

\[ \frac{3}{7} \times \frac{3}{7} = 360 \]

\[ 360 \div \frac{3}{7} = 840 \]

7. Divide €1,200 in the ratio 11:6:3

\[ \text{20 parts} \]

\[ 1200 \div 20 = 60 \]

\[ 11 \times 60 = \€660 \]

\[ 6 \times 60 = \€360 \]

\[ 3 \times 60 = \€180 \]

8. A company buys a product for €144 and sells it for €150. Calculate the percentage profit.

Give your answer to 2 significant figures.

\[ \frac{\text{Profit}}{\text{Original Cost}} \times 100 \]

\[ \frac{6}{144} \times 100 = 4.2\% \]

Probability

9. Tickets numbered 1 to 15 are placed in a box. If one ticket is drawn at random, find the probability of getting:

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<td>( \frac{4}{9} )</td>
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Geometry

11. Write down the size of the angles marked with a letter in each of the following:

- 180° - 64° = 116°

- 180° - 105° = 75°

- 180° - 120° = 60°
\[ 180 - 40 = 140 \]

\[ A = 180 - 80 = 70 \]
\[ A = 70 \]

\[ 80 + 30 = 110 \]
\[ 180 - 110 = 70 \]

\[ B = 60 \times 65 = 125 \]
\[ 125 + 30 = 155 \]
\[ 160 - 155 = 25 \]
\[ A = 25 \]