

Leaving Cert - Revision Sheet 1

Algebra

1. Solve the following equations

(a) $5x - 2 = 40 - x$

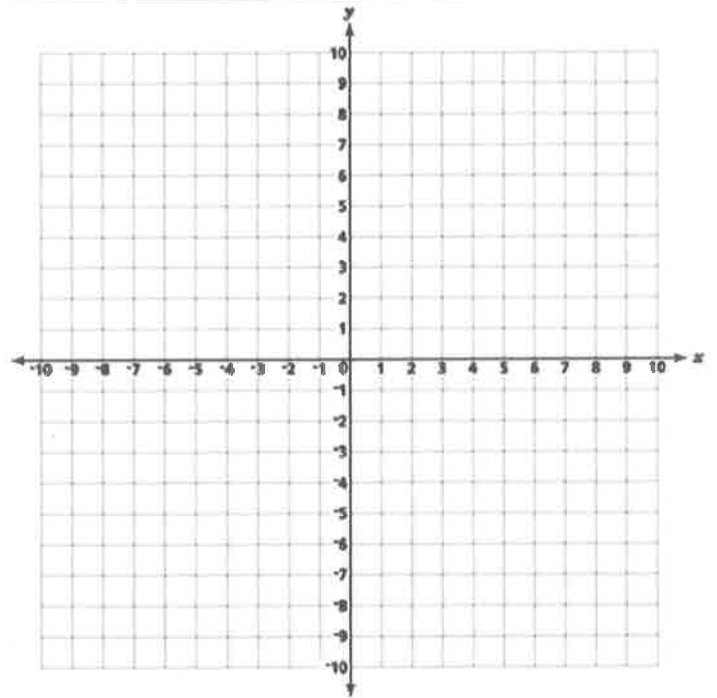
(b) $3(x - 1) = 18 - 5(x + 1)$

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) $|AB|$

Statistics

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. $\frac{3}{7}$ 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:

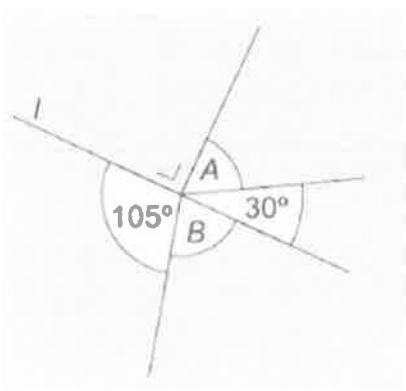
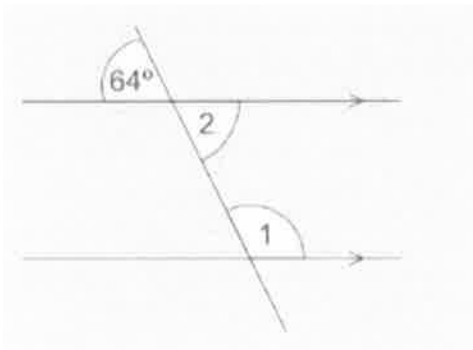
(a) The number 4	(b) An even number
(c) A two-digit number	(d) A multiple of 3

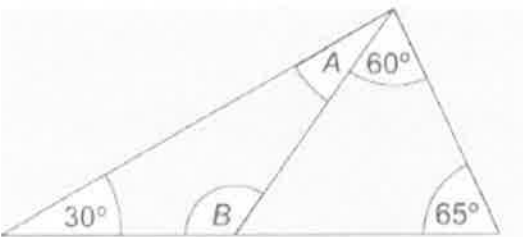
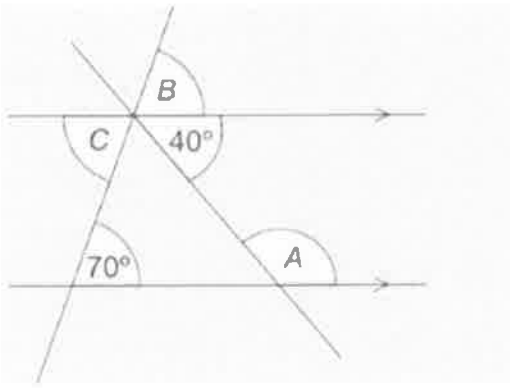
10. A letter is chosen at random from the letters of the word *HAPPINESS*. What is the probability that the letter is:

(a) <i>H</i>	(b) A vowel
(c) <i>P</i>	(d) <i>P</i> or <i>S</i>

Geometry

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





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Algebra

1. Solve the following equations

<p>(a)</p> $5x - 2 = 40 - x$ $\begin{array}{r} +2 \quad +2 \quad +2 \quad -x \\ \hline 6x = 42 \\ \boxed{x = 7} \end{array}$	<p>(b)</p> $3(x - 1) = 18 - 5(x + 1)$ $3x - 3 = 18 - 5x - 5$ $\begin{array}{r} 3x - 3 = 13 - 5x \\ +5x \quad +3 \quad +5x \\ \hline 8x = 16 \\ \boxed{x = 2} \end{array}$
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Co-ordinate Geometry

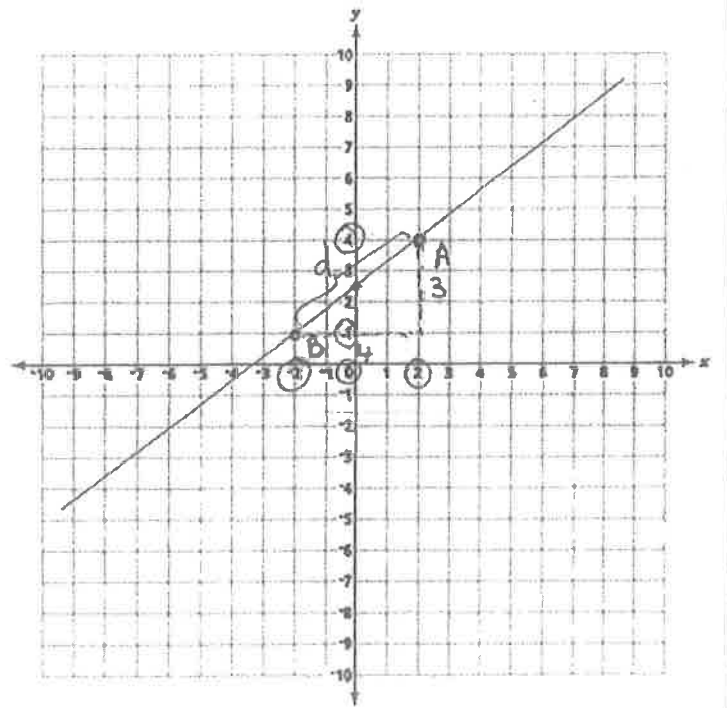
2. Plot the points A (x_1, y_1) and B (x_2, y_2) on the co-ordinate diagram.

Using whatever method you like, calculate the following:

(a) Slope of AB

$$m = \frac{\text{RISE}}{\text{RUN}} = \frac{3}{4}$$

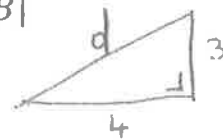
$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{1 - 4}{-2 - 2} = \frac{-3}{-4} = \boxed{\frac{3}{4}}$$



(b) Mid-point of [AB]

$$(0, 2.5)$$

(c) |AB|



$$d^2 = 3^2 + 4^2$$

$$d^2 = 25$$

$$\boxed{d = 5}$$

$$|AB| = 5$$

Statistics

3. Circle the correct type of data in each case

(a) The number of windows in a house

Numerical / Categorical

(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

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

Primary / Secondary

Patterns / Sequences

4. For the sequence given by $T_n = 2n - 1$

$T_n = 2n - 1$
 (GOES UP 1) (PREVIOUS TERM)
 $T_1 = 2(1) - 1 = 1$
 $T_2 = 2(2) - 1 = 3$
 $T_3 = 2(3) - 1 = 5$

(a) Calculate the first 5 terms of the sequence

a_n 1, 3, 5, 7, 9, ...

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

LINEAR / ARITHMETIC 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 d=7

(b) Write down T_n for this sequence

$T_n = 7n - 1$

(c) Hence, find which term of this sequence is 90

6, 13, 20, 27, 34, 41, 48, 55
62, 69, 76, 83, 90

$$T_n = 7n - 1 = 90$$

$$7n = 91$$

$$n = 13$$

13th TERM

Numbers

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

$$\frac{1}{7} = 360 \div 3 = 120$$

$$\frac{7}{7} = 120 \times 7 = \boxed{\text{€}840}$$

$$? \times \frac{3}{7} = 360$$

$$360 \div \frac{3}{7} = 840$$

7. Divide €1,200 in the ratio $\boxed{11:6:3}$ 20 PARTS

1 PART : $1200 \div 20 = 60$

$$11 \times 60 = \boxed{\text{€}660}$$

$$6 \times 60 = \boxed{\text{€}360}$$

$$3 \times 60 = \boxed{\text{€}180}$$

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

$$\frac{\text{PROFIT}}{\text{ORIGINAL PRICE}} \times 100 = \frac{6}{144} \times 100 = \boxed{4.2\%}$$

Probability

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

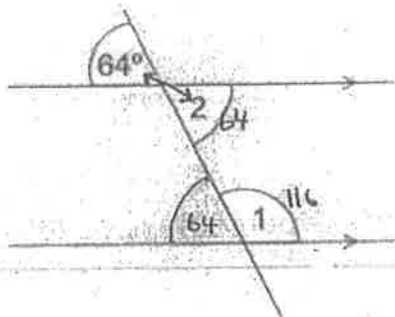
(a) The number 4 $\frac{1}{15}$	(b) An even number $\frac{7}{15}$
(c) A two-digit number $\frac{6}{15} = \frac{2}{5}$	(d) A multiple of 3 $\frac{5}{15} = \frac{1}{3}$

10. A letter is chosen at random from the letters of the word *HAPPINESS*. What is the probability that the letter is:

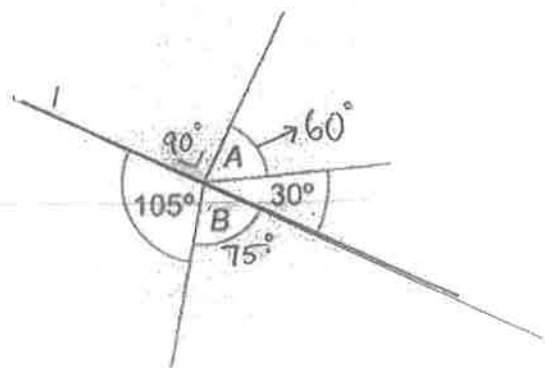
(a) H $\frac{1}{9}$	(b) A vowel $\frac{3}{9} = \frac{1}{3}$
(c) P $\frac{2}{9}$	(d) P or S $\frac{4}{9}$

Geometry

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

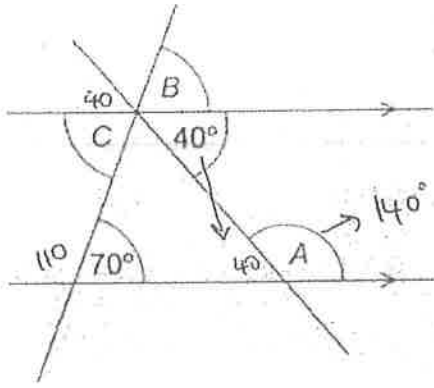


$$180 - 64 = 116$$

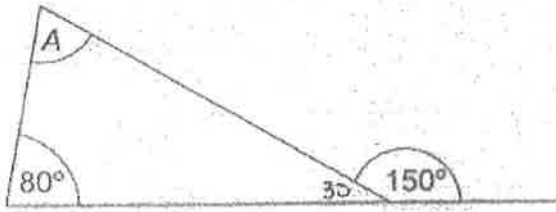


$$180 - 105 = 75$$

$$180 - 120 = 60$$



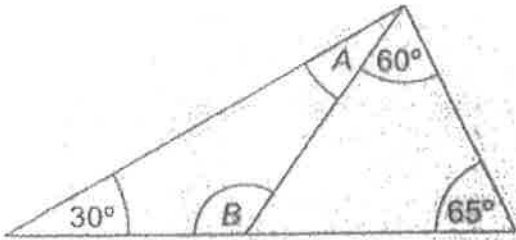
$$180 - 40 = 140$$



$$A = 150 - 80 = 70$$

$$\boxed{A = 70}$$

$$80 + 30 = 110 \quad 180 - 110 = 70$$



$$B = 60 + 65 = 125$$

$$\boxed{B = 125}$$

$$125 + 30 = 155$$

$$180 - 155 = 25$$

$$\boxed{A = 25}$$