# PROPORTION AND STATISTICS TEST - 3° ESO

**Exercise 1: (1.25 points)** Fill in the gaps in the following tables and find the values of the constants of proportionality knowing that the magnitudes involved are:

a) Directly proportional

| | | | | | |
|---|---|---|---|---|---|
| 10 | | 4 | 15 | | 35 |
| | 6 | 5 | | 20 | |

b) Inversely proportional

| | | | | | |
|---|---|---|---|---|---|
| | 8 | 12 | | 0.5 | |
| 4 | 6 | | 10 | | 1 |

**Exercise 2: (1.25 points)** The price of a house is €230 000.

a) If the price of houses has increased by 18% this last year, what was the original price of the house?

b) If the original price was €250 000, what would the percentage of variation be?

**Exercise 3: (1.25 points)** Split €9100 in an inversely proportional way to 2, 5 and 6.

**Exercise 4: (1.25 points)** A cruiser needs seven days to cover a distance of six hundred and fifty km when traveling eight hours a day. How many hours would the cruiser have to travel each day in order to cover a distance of five hundred and sixteen km in five days?

**Exercise 5: (1 point)** Quiero hacer un estudio acerca de las horas diarias de uso de Internet y redes sociales entre los adolescentes andaluces. Para ello he escogido a mil alumnos en cada una de las ocho capitales andaluzas. Indica cuáles son la población y la muestra y clasifica la variable aleatoria. ¿Crees que la muestra es significativa?

**Exercise 6: (2 points)** Given the following table showing the values and frequencies of a certain random variable

| $x_i$ | 0 | 2 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| $f_i$ | 4 | 8 | 2 | 8 | 5 |

Work out:

a) The measures of central tendency
b) Pearson's coefficient of variation
c) The bar diagram, the histogram and the frequency polygon

**Exercise 7: (2 points)** Given the following table showing the values and frequencies of a certain random variable

| $x_i$ | [0,4] | (4,8] | (8,12] | (12,16] |
|---|---|---|---|---|
| $f_i$ | 5 | 10 | 7 | 4 |

Work out:

a) The percentage corresponding to each value of the variable
b) The mode
c) The measures of dispersion
d) The bar diagram, the histogram and the frequency polygon