

Unit 2 – Proporcionalidad

Vocabulary

- **Ratio:** razón
- **Proportion:** proporción
- **Magnitudes directamente proporcionales:** directly proportionals magnitudes
- **Magnitudes inversamente proporcionales:** inversely proportionals magnitudes
- **Regla de tres directa:** Direct rule of three
- **Regla de tres inversa:** Inverse rule of three
- **Porcentajes:** percentages
- **Aumentar:** increase
- **Disminuir:** decrease
- **Interés simple:** simple interest
- **Interés compuesto:** compound interest
- **Capital:** capital
- **Tiempo:** time
- **Rédito:** interest rate

Proportionality

- Two magnitudes are **directly proportional** when they change in the **same way**, I mean, if one of them increases or decreases, the other increases or decreases.
Kilograms of flour and Price. Directly Proportional
- Two magnitudes are **inversely proportional** when they change in a **different way**, I mean, if one of them increases the other decreases, and vice versa.
Average speed and time taken. Inversely Proportional

Here, there are more examples. You can explain them the definition and, then, practise them with the students, please.

- a) The number of kilos sold and the money earned. (**Directly proportional**)
- b) The number of workers doing a job and the time spent (**Inversely proportional**)
- c) The speed of a vehicle and the distance travelled in half an hour (**Directly Proportional**)

- d) The number of printed pages and the price (**directly proportional**)
- e) The flow rate of a tap and the time it takes to fill a bucket (**Inversely proportional**)
- f) Length of a package of dog food and the number of dogs. (**Inversely proportional**)

Percentages

In relation with percentages, you can talk with them about sales in your country. Maybe you can explain them what is “**Black Friday**”.

Solve these problems

1. A car travelled between two cities in 39 minutes at an average speed of 95 km/h. How time does it need to travel the same distance at an average speed of 65 km/h?
2. A kangaroo travels 12 metres in four jumps. How far does it travel in 10 jumps?
3. The restaurants have decided to increase their prices 10% in order to obtain more profits after the pandemic. If the Price of a menu is 9,5 €, what will be the final price?
4. Christine buys a computer that costs 670 €. When she pays, she will have to add 21% IVA. Moreover, a 25% discount will also be applied as the computer is on sale. How much will she pay for the computer?