

### PROPORTION WORKSHEET - 1º ESO

- 1) Determine if the following amounts are proportional or not. If they are, indicate if they are directly or inversely proportional.
  - a) The weight you hang on a spring and the length the spring stretches
  - b) The size of a city and the number of inhabitants
  - c) The price of a DVD and the number of DVDs that I can buy with a ten euros bill
  - d) The number of cows in a farm and the liters of milk they produce
  - e) The money I have and the number of marshmallows that I can buy
  - f) The size of my shoes and the color of my hair
- 2) The cost of three pens is 4.5€. Work out the cost of seven pens.
- 3) A car travelling at a constant speed covers 20 km. in 5 hours. If we know that the car takes 3 hours to get from city A to city B, what is the distance between the cities?
- 4) The Crayola crayon company can make 2400 crayons in 4 minutes. How many crayons can they make in 15 minutes?
- 5) A typist can type 120 words in 100 seconds. At that rate, how many minutes would it take her to type 258 words?
- 6) Flora is monitoring the population of red kangaroos in the deserts of Australia. Flora catches 20 red kangaroos, mark them and releases them. A little while later, a helicopter pilot takes an aerial photograph of 450 red kangaroos, 8 of which are marked. What is the best estimate for the red kangaroo population?
- 7) On a map having a scale of 1 cm = 25 km, the distance between two cities is 3.2 cm. What is the actual distance between the two cities?
- 8) A farmer has enough food to feed 300 hens for 20 days. If he buys 100 more hens, how long would the same amount feed the total hens?
- 9) It takes 2 workers 10 days to tile the wall of an industrial premises. How many workers would it take to tile the same wall in 5 days?
- 10) Three business associates, Anthony, Joseph and Ana invest €5000, €8000 and €10000 respectively, to set up a company. After some time the company makes €2300 profit. What share of the profit does each investor receive?
- 11) Four pipes can fill a tank in 70 minutes. How long will it take to fill the tank by 7 pipes?
- 12) If five men can paint a house in thirty-six hours, how many men would be needed to paint the house in twelve hours? How long would it take one man to paint the house?
- 13) If two pencils cost \$1.50, how many pencils can you buy with \$9.00?
- 14) If  $\frac{4}{7}$  of a tank can be filled in 2 minutes, how many minutes will it take to fill the whole tank?

15) James and Michael are strolling on the beach. They stop to build a sand castle. James says : "With my 64 921 005 grains of sand I can build 5 towers for our castle." Michael replies : "We need 7 towers !" How may grains of sand must James gather in addition to what he already has ?

16) Fill in this directly proportionality chart

1		8	10			0.3
	15	40		60	125	

17) Fill in this inversely proportionality chart

1	5		10	8		0.5
	8	20			120	

18) It takes 14 hours for a faucet with a flow of 18 liters per minute to fill a reservoir with water. How long will it take if its flow is reduced to 7 liters per minute?

19) My class has 24 students. If 75% of them have dark hair, how many blond people are there in my class?

20) In a flock of 400 sheep, 30% of them have baby lambs. How many lambs have been born?

21) My school has 900 students. 40% practice some sports, 30% go to the conservatory and 10% attend acting classes. How many students take part in each activity?

22) When I bought a jumper that cost €40, I got a 15% discount. What's the price of the jumper now?

23) A bus is carrying 60 passengers. After a stop, 40 passengers get off. What percentage of passengers are still in the bus?

24) The price of gas has increased 20% in the last two years. If one liter cost €1.25 two years ago, what's the price of oil nowadays?

25) A shopkeeper buys a package of shirts to sell to the public. 75% of them are plain and the rest are colored or checkered. If he got 90 plain shirts, how many shirts did he buy in total?

26) We are going on a field trip next week. We want to rent a bus with 55 seat, but only 70% of the students have paid their part so far. How many students won't be allowed to go to the trip unless they bring the money?