

PROPORTION AND RATIONAL NUMBERS TEST- 2º ESO

Exercise 1: (1.25 ptos) Little seagull wants to go to Africa to spend the winter, and she remembers that last year, flying nonstop at a speed of 42 km/h, she needed seven hours and a half to complete the journey. But a very big storm is approaching and she must hurry.

- a) How long will she need if she flies nonstop at a speed of 50 km/h?
6.3 hours = 6 hours and 18 minutes
- b) What would her speed be if she only has five hours to get there? **63 km/h**

Exercise 2: (1.5 ptos) Some weeks ago we invited the three English teachers to have dinner. We were a total of seven Spanish teachers and we had to pay fifteen euro and eighty cents each.

- a) How much was the bill? **110.6€**
- b) Each one of us paid sixteen euro. What was the tip? **1.4€**
- c) If the English teachers had also paid their part, how much would each one of us have to pay?
11.06€

Exercise 3: (1 pto) When they order pizza for dinner, Frank's mother divides them according to the ages of her sons. If Peter is 21 years old, Isobel is 15, Frank is 12 and they got two pizzas with eight slices each, how many slices does each one of them receive?

Peter gets 7 slices, Isobel gets 5 and Frank gets 4 slices

Exercise 4: (1 pto) The other day I spilled my coffee over my tablet and the poor thing died, so I had to buy a new one. Luckily, it was Black Friday and I got a 15% discount, so I only had to pay 178.95€. What was the original price of the tablet? **210.53€**

Exercise 5: (1.25 ptos) Classify the following decimal numbers and the turn them into fractions:

- a) $8.\overline{2739} = \frac{82731}{9999}$ **Pure repeating**
- b) $0.122333444455555 \dots =$ **I can't, irrational**
- c) $5.17171717 = \frac{517171717}{100000000}$ **Terminating**
- d) $1.4\overline{257} = \frac{14243}{9990}$ **Mixed repeating**

Exercise 6: (1.5 ptos) Write the following numbers using scientific notation:

- a) The radius of a speck of dust, 0.0045 mm, in km \rightarrow **$4.5 \cdot 10^{-9}$ km**
- b) The mass of Jupiter, 1898000000000000000000000000 kg \rightarrow **$1.9 \cdot 10^{27}$ kg**
- c) $824591.72 \cdot 10^{-2} =$ **$8.25 \cdot 10^3$**
- d) $0.0000007891 \cdot 10^{-1} =$ **$7.89 \cdot 10^{-8}$**

Exercise 7: (1.5 ptos) Fill in the gaps in these tables and find the value of the constant of proportion, knowing that they are:

a) Directly proportional

36	72	63	9	108	48	10.8	$k = 9$
4	8	7	1	12	5.33	1.2	

b) Inversely proportional

5	10	1	2	7.5	32	80	$k' = 40$
8	4	40	20	5.33	1.25	0.5	



Exercise 8: (1 pto) My mom prepares a dish she calls "Gypsy Arm" with mashed potatoes, tuna, fried tomato and pickles. For us four people she needs three cans of tuna and two hundred grams of gherkins, but my three cousins just phoned saying that they are coming for lunch too. Find the quantities of tuna and gherkins that is she going to need now.

She is gonna need 6 cans of tuna and 350 grams of gherkins

