



PROPORTION AND RATIONAL NUMBERS TEST

2º ESO



Exercise 1: (1.75 ptos) Fill in the gaps in these tables and find the value of the constant of proportion, knowing that they are:

a) Directly proportional

30	18	54	12	15	4.2	k = 6
5	3	9	2	2.5	0.7	

b) Inversely proportional

16	2	6	12	40	0.5	k = 48
3	24	8	4	1.2	96	

Exercise 2: (1.5 ptos)

- a) This year there are a 6% more Christmas lights in Córdoba than the previous one. If they installed 1 450 000 lights last year, how many lights do we have now? **1 537 000 lights**
- b) But the needed power has decreased by 10% because they are energy saving bulbs. If this year they need 107460 w, how much did they spend last Christmas? **119 400 w**

Exercise 3: (1 pto) Divide 1472€ in a directly proportional way to 2, 5 and 9

$$x = 184€ \quad y = 460€ \quad z = 828€$$

Exercise 4: (1.25 ptos) I want to go to the store to buy some food for next week. I need three bricks of milk, 0.85€ each, a bag of bread, 1.15€, one kilo and a half of oranges, 1.80€/kg and two cans of tomato, 0.65€ each. How much money will I have to pay? I only have 7€ ...

You will need 7.7 €, leave a brick of milk, for instance

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

a) $12.\overline{73} = \{\text{pure repeating}\} = \frac{1261}{99}$

b) $5.0\overline{876} = \{\text{mixed repeating}\} = \frac{50368}{9900}$

c) $5.24681012\dots = \{\text{irrational}\} \neq$

d) $7.252525 = \{\text{terminating}\} = \frac{7252525}{1000000}$

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

a) $74271684300000000 = 7.42 \cdot 10^{17}$

b) $0.000000000009371 = 9.37 \cdot 10^{-12}$

c) $2195.56 \cdot 10^{-7} = 2.2 \cdot 10^{-4}$

d) $0.00002178 \cdot 10^{-1} = 2.18 \cdot 10^{-6}$

Exercise 7: (1.75 ptos)

- a) I need thirteen skeins of wool to knit four Christmas sweaters. How many skeins would I need for nine sweaters? How many skeins do I have to buy? **29.25 skeins, so you have to buy 30 skeins**
- b) Fifteen people need two hours and a half to remove all the leaves from the branches of a dead tree. How long would twenty people need? **1 hour, 52 minutes and 30 seconds**

