FIRST TERM GLOBAL TEST- 3º ESO

Exercise 1: (2.5 ptos) Work out:

a) $\sqrt[3]{x^2} : \sqrt[5]{x^{-1}} \cdot \sqrt{x^{-3}} = \sqrt[30]{\frac{1}{x^{19}}}$

b) $\frac{\sqrt[5]{x^{-4}y^3} \cdot \sqrt{x^{-1}}}{\sqrt[6]{x^5 y^{-7}}} = \frac{y}{x^2}\sqrt[30]{\frac{y^{23}}{x^4}}$

c) $\sqrt[3]{135} - 7\sqrt[3]{320} + 3\sqrt[3]{625} = -10\sqrt[3]{5}$

Exercise 2: (0.75 ptos) Divide 5376€ in a directly proportional way to 5, 7 and 9

$a = 1280€ \qquad b = 1792€ \qquad c = 2304€$

Exercise 3: (1 pto) A friend of mine works as a builder and he had to cut a beam with a length of 4.75 m, but his cell phone rang just then, the saw slipped, and now the beam is only 4.50 m long. Find the percent error and tell me if he should go along with the project

$E_p = 5.26\% \rightarrow$ I think the beam could break and I would have to visit him in jail :(

Exercise 4: (0.75 ptos) Good times are finally back and Santa has enough gold coins to hire a bunch of elves to help him during this busy season. Last year, with two hundred and fifty-eight elves, they wrapped 731 millions of presents in twenty-eight days. Now they have 850 millions of presents and they want to be done in just twenty-one days. How many elves does he have to hire?

142 elves, since he already has 258

Exercise 5: (1 pto) Find these unions and intersections of intervals and **write them as inequalities too**:

a) $[-7,-2] \cup [-4,3) = [-7,3) \rightarrow -7 \le x < 3$

b) $(-1,4) \cap [0,1] = [0,1] \rightarrow 0 \le x \le 1$

Exercise 6: (1.25 ptos) Work out and express the answers using scientific notation:

a) $5.42 \cdot 10^{-4} + 1.71 \cdot 10^{-3} - 3.15 \cdot 10^{-2} = -2.93 \cdot 10^{-2}$

b) $\left(5.42 \cdot 10^{-7}\right) \cdot \left(9.14 \cdot 10^{-3}\right) = 4.95 \cdot 10^{-9}$

c) $\left(5.42 \cdot 10^{-3}\right) : \left(8.59 \cdot 10^{-2}\right) = 6.31 \cdot 10^{-2}$

Exercise 7: (2 ptos) Given the following table representing a random variable:

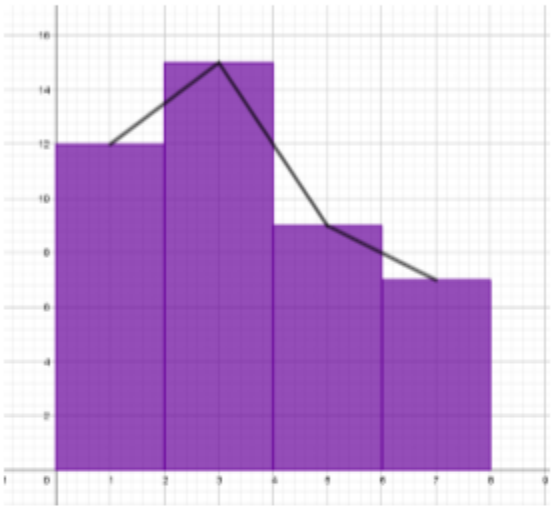
[0,2]	(2,4]	(4,6]	(6,8]
12	15	9	7

a) Classify the variable Quantitative continuous

b) Find the mode and the median $Mo = (2,4]$ $Me = (2,4]$

c) Find Pearson's coefficient of variation $CV = 0.59$

d) Plot the frequency polygon



Exercise 8: (0.75 ptos) Find the selling price of a mix made of half a kilo of gherkins, 2.5€/kg, 400 grams of green olives, 5.5€/kg, and 300 grams of black olives, 6€/kg 4.38 €/kg