FIRST TERM GLOBAL TEST

3º ESO

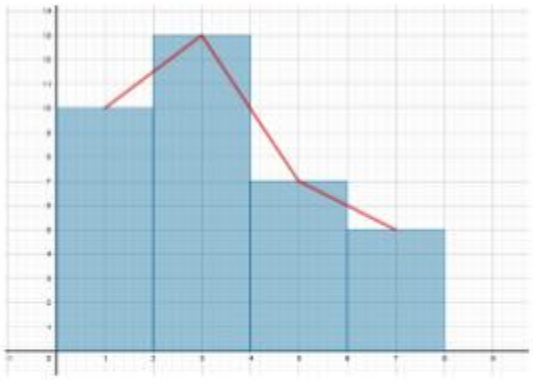
Exercise 1: (2.25 ptos) Given the following table representing a random variable:

x_i	[0,2]	(2,4]	(4,6]	(6,8]
f_i	10	13	7	5

a) Find the range and the median $R = 8, \quad Me = (2,4]$

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

c) Plot the frequency polygon



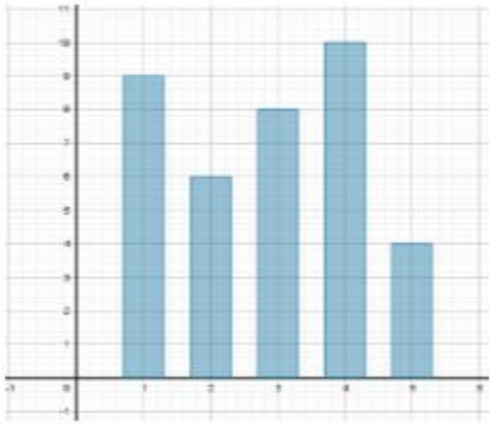
Exercise 2: (2.25 points) Given the following table showing the values and frequencies of a certain random variable

x_i	1	2	3	4	5
f_i	9	6	8	10	4
%	24	16	22	27	11

a) Find the percentage corresponding to each value of the variable

b) Find the measures of central tendency $Mo = 4 \qquad \bar{x} = 2.84 \qquad Me = 3$

c) Plot the bar diagram and the histogram



Exercise 3: (2.5 ptos) Work out and write as a single radical if possible:

a) $\sqrt[5]{a^{-4}} \cdot \sqrt{a} : \sqrt[3]{a^{-2}} = \sqrt[30]{a^{11}}$ (0.5)

b) $\dfrac{\sqrt[7]{x^{-4}y^5}\sqrt{y^{-1}}}{\sqrt[10]{x^3y^{-9}}} = y \cdot \sqrt[70]{\dfrac{y^8}{x^{61}}}$ (1)

c) $5\sqrt{300} - \sqrt{432} + 3\sqrt{75} = 53\sqrt{3}$ (1)

Exercise 4: (1 pto) Find these unions and intersections of intervals and **write them as inequalities too:**

a) $[-4,2] \cup [-3,+\infty) = [-4,+\infty) \rightarrow -4 \leq x$

b) $(-\infty,0) \cap [-1,+\infty) = [-1,0) \rightarrow -1 \leq x < 0$

Exercise 5: (1 pto) The price of olive oil rocketed during these past three years. First, it increased by 40%, next year it increased by 35% and then it increased again by 50%. But now, thanks to the rain that fell during these past months, it has decreased by 30%

a) What's the final percentage change? 98.45%

b) If the original price of a liter of olive oil was of 3.5€, what was the maximum price it reached? 9.92€

c) What's the price now? 6.95€

Exercise 6: (1 pto) We need fifteen ovens working ten hours a days to roast 7500 kg of coffee. How much coffee could we roast with twenty ovens working for fourteen hours a day? 14000 kg