Exercise 1: (2.75 ptos) Work out, express as a single radical and simplify if possible:

a) $\sqrt[3]{x^5} : \sqrt[7]{x^{-3}} \cdot \sqrt{x^{-7}} = \dfrac{1}{x} \cdot \sqrt[42]{\dfrac{1}{x^{17}}}$

(0.75)

b) $\dfrac{\sqrt[5]{a^2 b^{-3}} \sqrt{a^{-1}}}{\sqrt[3]{a^{-4} b}} = a \cdot \sqrt[30]{\dfrac{a^7}{b^{28}}}$

(1)

c) $\sqrt{80} - 3\sqrt{108} - 7\sqrt{192} = 4\sqrt{5} - 74\sqrt{3}$

(1)

Exercise 2: (1 pto) Divide 5800€ in an inversely proportional way to 3, 5 and 9

$x = 3000€ \qquad y = 1800€ \qquad z = 1000€$

Exercise 3: (1.5 ptos) Find these unions and intersections of intervals and **write them as inequalities too:**

a) $(-4, 0] \cup [-2, +\infty) = (-4, +\infty) \rightarrow -4 < x, \ x > -4$

b) $(-7, 2) \cap [0, 9] = [0, 2) \rightarrow 0 \leq x < 2$

c) $(-3, 0] \cap [0, 2) = \{0\} \rightarrow x = 0$

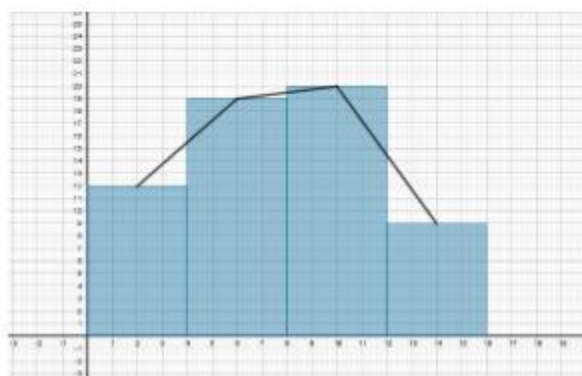**Exercise 4: (2.75 ptos)** Given the following table representing a random variable:

x_i	$[0, 4]$	$(4, 8]$	$(8, 12]$	$(12, 16]$
f_i	12	19	20	9

a) Classify the variable   Quantitative continuous

b) Find the measures of central tendency $Mo = (8, 12] \qquad \bar{x} = 7.73 \qquad Me = (4, 8]$

c) Find Pearson's coefficient of variation $CV = 0.5$

d) Plot the frequency polygon

Exercise 5: (1 pto) I've bought shares from a company with a value of 3000€. The first year their price increased by 5%, and the second year they increased again by 7.25%, but these past two years they've lost a 8.5% each year. How much money do I have now?   2828.46€

Exercise 6: (1 pto) Thirty gnomes working non-stop need four hours and a half to prepare chocolate milk for the 1200 children who are visiting Santa today. How many hours will twenty-five gnomes have to work tomorrow if 1750 children are expected to go for a visit? Round the answer to hours, minutes and seconds.   7h 52'30"