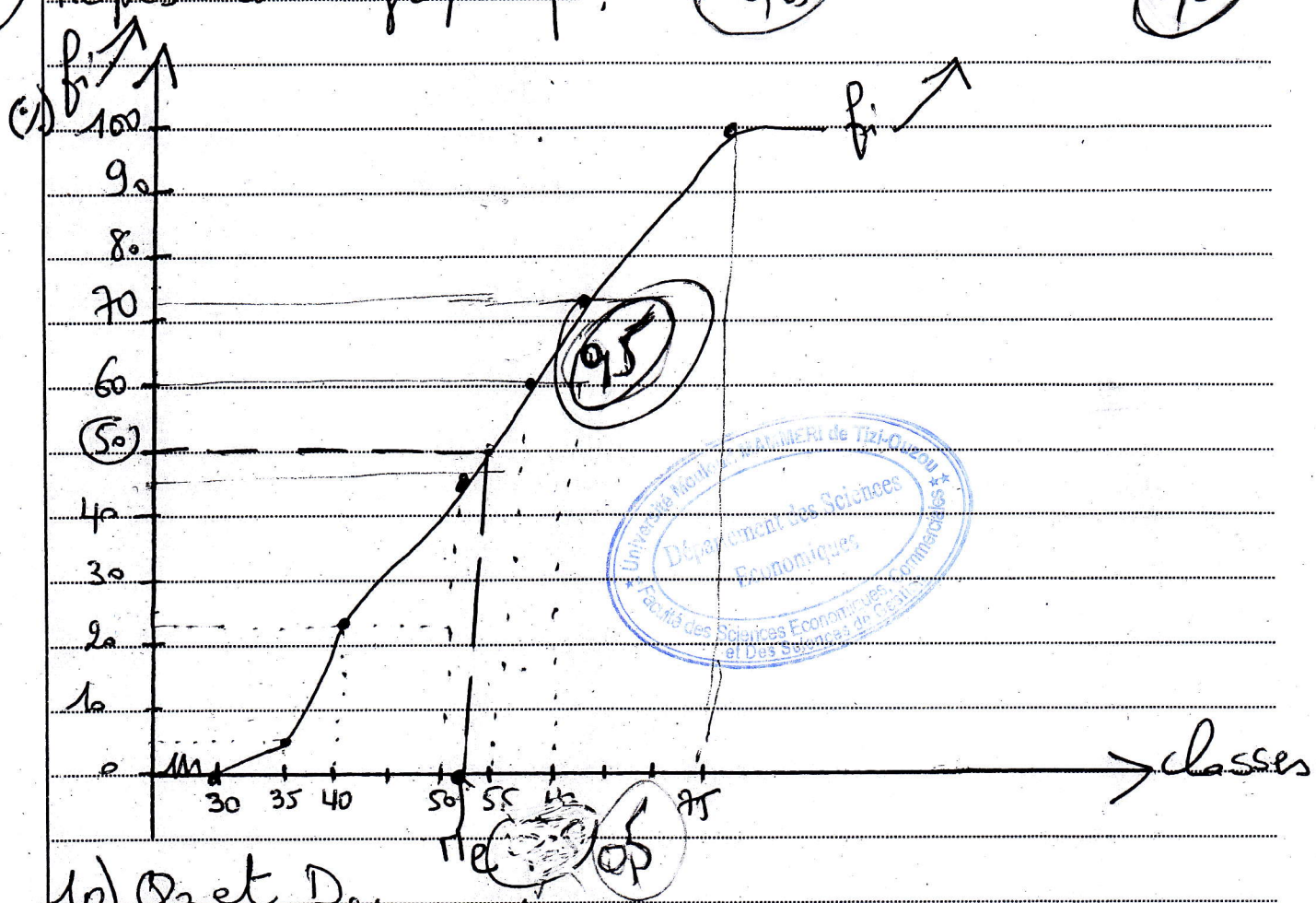
9) Médiane : $M_e = x_0 + a_i \frac{\frac{N}{2} - n_{me-1}}{n_{me}}$; $\frac{N}{2} = \frac{500}{2} = 250$ (0,25) (3)

$M_e \in [50\ 55[\Rightarrow M_e = 50 + 5\frac{(250 - 225)}{75} = 51,66$ litres (0,25) (0,5)

Représentation graphique :



10) Q_3 et D_2

$Q_3 = x_0 + a_i \frac{\frac{3N}{4} - n_{Q_3 - 1}}{n_{Q_3}}$; $\frac{3(500)}{4} = 375 \Rightarrow Q_3 \in [60\ 75[$ (0,75)

$Q_3 = 60 + 15\frac{(375 - 360)}{140} \Rightarrow Q_3 = 60 + 1,5 = 61,5$ litres

$D_2 = x_0 + a_i \frac{\frac{2N}{10} - n_{D_2 - 1}}{n_{D_2}}$; $\frac{2(500)}{10} = 100$; $D_2 \in [35\ 40[$ (0,75)

$D_2 = 35 + 5\frac{(100 - 25)}{90} \Rightarrow D_2 = 35 + 4,16 = 39,16$

11) $\overline{X} = \frac{X_1 N_1 + X_2 N_2}{N_1 + N_2} \Rightarrow \overline{X} = \frac{(51,5 \times 500) + (1400 \times 70,56)}{500 + 1400}$ (0,25) (0,5)

$\overline{X} = \frac{25975 + 98784}{1900} = 65,66$ litres. (0,75)