Statistiques

Exercice 1.

a) $\bar{x} \simeq 1.537$

b) $\sigma \simeq 1.823$

c) $\tilde{x} = \dfrac{x_{27} + x_{28}}{2} = \dfrac{1+2}{2} = 1.5$

d) $\dfrac{11}{54} \simeq 20.37\%$

$\bar{x} \simeq 2.268$

$\sigma \simeq 2.581$

$\tilde{x} = \dfrac{x_{28} + x_{29}}{2} = \dfrac{2+3}{2} = 2.5$

$\dfrac{28}{56} = 50\%$

Exercice 2.

a) 80 poissons

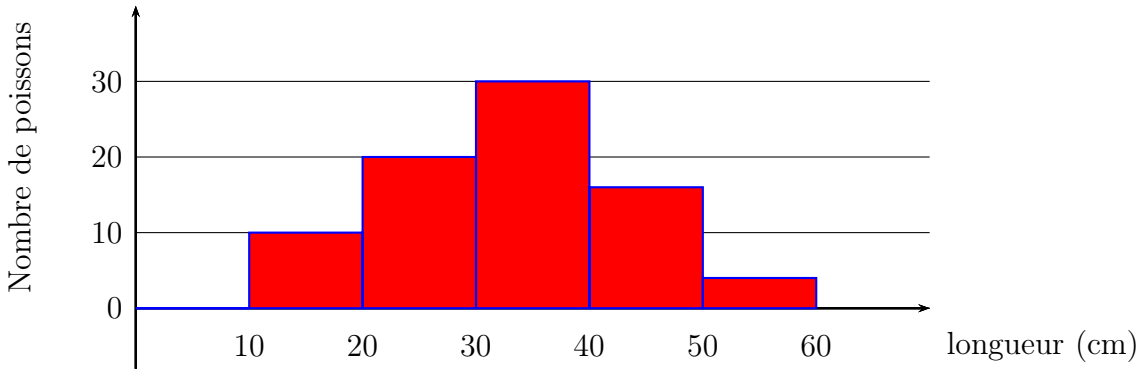
b)

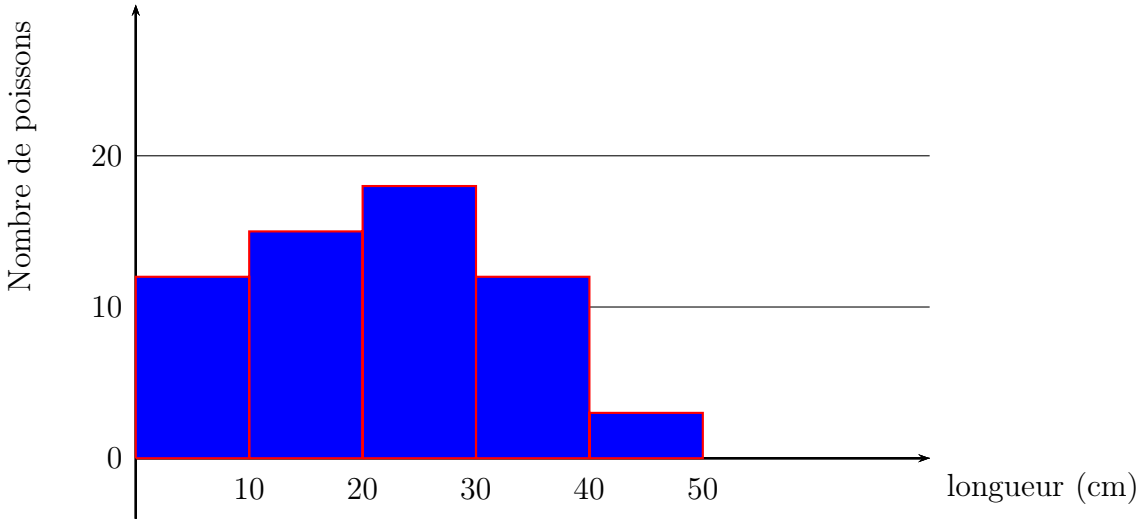
x_i	n_i	f_i (%)	$\Sigma\ f_i$ (%)
[10 ; 20[	10	12.5	12.5
[20 ; 30[	20	25	37.5
[30 ; 40[	30	37.5	75
[40 ; 50[	16	20	95
[50 ; 60[	4	5	100
Total	80	100	

60 poissons

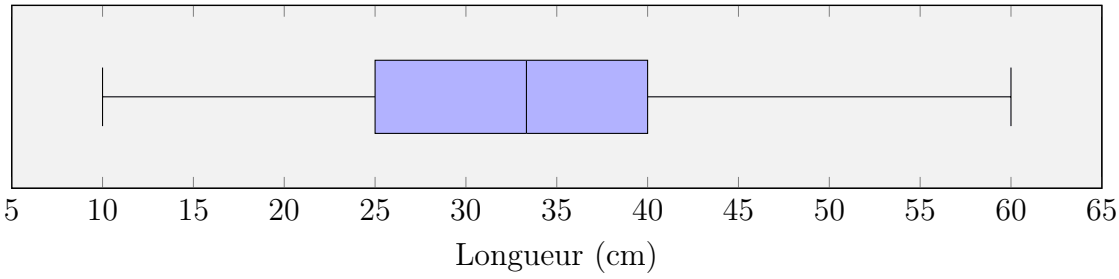
x_i	n_i	f_i (%)	$\Sigma\ f_i$ (%)
[0 ; 10[	12	20	20
[10 ; 20[	15	25	45
[20 ; 30[	18	30	75
[30 ; 40[	12	20	95
[40 ; 50[	3	5	100
Total	60	100	

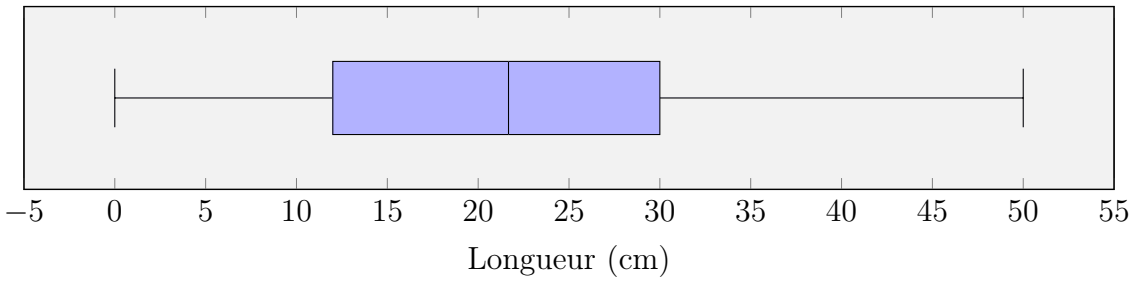
c)





d) $\bar{x} = 33$ cm	$\bar{x} = 21.5$ cm
e) $\sigma \simeq 10.536$ cm	$\sigma \simeq 11.522$ cm
f) $\dfrac{z}{0.125} = \dfrac{10}{0.375} \Leftrightarrow z = \dfrac{10 \cdot 0.125}{0.375} \simeq 3.33$	$\dfrac{z}{0.05} = \dfrac{10}{0.3} \Leftrightarrow z = \dfrac{10 \cdot 0.05}{0.3} \simeq 1.67$
$\Rightarrow \tilde{x} \simeq 33.33$ cm	$\Rightarrow \tilde{x} \simeq 21.67$ cm
g) $\dfrac{z_1}{0.125} = \dfrac{10}{0.25} \Leftrightarrow z_1 = \dfrac{10 \cdot 0.125}{0.25} = 5$	$\dfrac{z_1}{0.05} = \dfrac{10}{0.25} \Leftrightarrow z_1 = \dfrac{10 \cdot 0.05}{0.25} = 2$
$\Rightarrow Q_1 = 25$ cm	$\Rightarrow Q_1 = 12$ cm





h) $1.5 = \dfrac{x - 33}{10.536}$

$\Leftrightarrow \quad x \simeq 1.5 \cdot 10.536 + 33 \simeq 48.8$ cm

$2 = \dfrac{x - 21.5}{10.522}$

$\Leftrightarrow \quad x \simeq 2 \cdot 10.522 + 21.5 \simeq 44.54$ cm