Q1 Let X be a continuous random variable. A random sample is taken and have the following quantities -

Variable	Sample size (n)	Mean ($\bar{x}$)	Standard Error of mean ($s/\sqrt{n}$)	Standard deviation (s)	variance (s^2)	Sum ($\sum_{i=1}^{n} x_i$)
X	?	?	1.58	6.11	?	751.40

i) Find out the missing quantities

(ii) Construct a 98% C-I for population mean (μ) (Two-sided)

Q2 Of 150 randomly selected cases of lung cancer, 650 resulted in death

i) Calculate a 94% Confidence Interval for the death rate from lung Cancer.

ii) How large the sample must be if we wish to be 94% confident that the error in estimating p is less than 0.03, regardless of the value of p.

Q3 Suppose we have 2 populations having the following data -

Population 1	Population 2
$n_1 = 14$	$n_2 = 16$
$\bar{x}_1 = 20$	$\bar{x}_2 = 22.$
$\sigma_1 = 2$	$\sigma_2 = 3$

Using $\alpha = 0.08$, Construct a confidence interval for $3(\mu_2 - \mu_1)$.