



Vidyavardhini's College of Engineering and Technology

Department of Artificial Intelligence & Data Science

AY: 2024-25

Class:	TE	Semester:	V
Course Code:		Course Name:	Stats

Name of Student:	Sainath Khot
Roll No. :	20
Assignment No.:	2
Title of Assignment:	
Date of Submission:	
Date of Correction:	

Evaluation

Performance Indicator	Max. Marks	Marks Obtained
Completeness	5	
Demonstrated Knowledge	3	
Legibility	2	
Total	10	

Performance Indicator	Exceed Expectations (EE)	Meet Expectations (ME)	Below Expectations (BE)
Completeness	5	3-4	1-2
Demonstrated Knowledge	3	2	1
Legibility	2	1	0

Checked by

Name of Faculty :

Signature :

Date :

Stats 2

Q1

$$\bar{x} = 3444 \text{ grams}$$

$$SD = \sigma = 20$$

$$n = 75$$

Confidence level = 95%

$$\alpha = 0.05, \quad Z_{\alpha/2} = 1.96$$

$\therefore \sigma$ is known & $n > 30$

Confidence interval estimation

$$= \left(\bar{x} - Z_{\alpha/2} * \frac{\sigma}{\sqrt{n}}, \bar{x} + Z_{\alpha/2} * \frac{\sigma}{\sqrt{n}} \right)$$

$$= \left(3444 - \frac{(1.96)(20)}{\sqrt{75}}, 3444 + \frac{(1.96)(20)}{\sqrt{75}} \right)$$

$$= (26.91, 26.98)$$

At 95% confidence interval of men
birth in Poland range from
(26.91, 26.98)

Q2)

$$n = 6 \text{ m}, \quad \bar{x} = 12.1 \text{ cm}$$

$$\sigma = 0.36 \text{ cm}$$

At 99% confidence interval, $z_{\alpha/2} = 2.58$

$$\alpha \text{ given } \text{vol} n, \\ \therefore 0.20.$$

Confidence interval estimate

$$= \left(\bar{x} - z_{\alpha/2} * \frac{\sigma}{\sqrt{n}}, \quad \bar{x} + z_{\alpha/2} * \frac{\sigma}{\sqrt{n}} \right)$$

$$= \left(12.1 - \frac{(2.58)(0.36)}{\sqrt{6}}, \quad 12.1 + \frac{(2.58)(0.36)}{\sqrt{6}} \right)$$

$$= (9.63091, 11.4981)$$

\therefore At 99% confidence interval, the true volume of mountain is (9.64, 11.45)