DA Assignment
Dt. 15th May 2023

Question:- Given μ = 100, $\sigma = 15, x_i = 85$;
Find ?

(a) Lower than 85
(b) Above 85
(c) Between 85 -100
(d) Between 100 -125

Sol:-

μ = 100, $\sigma = 15, x_i = 85$

Z Score is = $(x_i - \mu)/\sigma$

= (85 – 100)/ 15

= -15/15 = -1

*** Z Score is -1

a. Percentage below 85

Z score value of -1 is 0.1587, if we convert it into percentile
0.1587 * 100 = 15.87%

b. Percentage above 85

Z Score Value of -1 is 0.1587, in order to find the above 85% value we have to subtract Z score value from 1.
(1 - 0.1587) * 100 = 0.8413 * 100 = 84.13%

c. Percentage between 85 to 100;

Assuming lower limit as 85 and upper limit as 100
Z score for 85 is -1
Z score for 100 is 0 (assume)

Z score value of -1 is 0.15866 & Z score value of 0 is 0.5

Percentage between 85 & 100 is = (0.5 – 0.15877) * 100
= (0.34123)*100
= **34.123%**

d. Percentage between 100 to 125;

Assuming lower limit as 100 and upper limit as 125
Z score for 100 is 0
Z score for 125 is 1

Z score value of 0 is 0..5 & Z score value of 1 is 0.84134

Percentage between 100 & 125 is = (0.84134 – 0.5) * 100

= (0.34134)*100

= **34.134%**