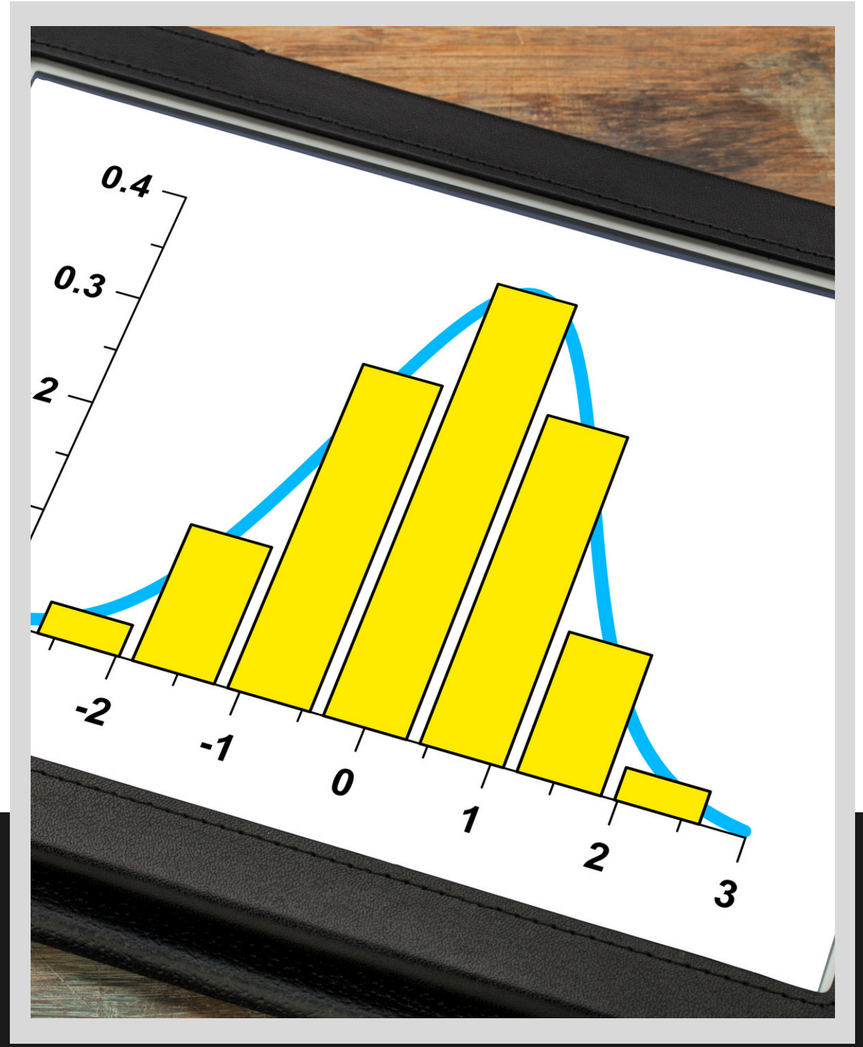
ASSIGNMENT PRESENTATION PRE MBA STATISTICS



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Contents

Question 1

1. Given that a student has an engineering background, what is the probability they score 70 or less in component 1? (Do not use the data set for this question) **[5 Points]**

Answer	calculation
p 0.0486	(70-75)/3= -1,66 Extract value out of Z table result= p 0.0486

Question 2

2. In the given data set, what fraction of students with an engineering background have scored 70 or less in component 1? **[5 Points]**

Answer	calculation
184/8 or 8 out of 184	step 1 > i applied a filter to only show students with an Engineering background step 2> i sorted the scores from small to high step3>i used the =count formula to count the student with a score equal to 70 and less

Question 3

3. Given the distributions, what is the expected value of the class score in component 1? (Do not use the data set for this question) **[5 Points]**

Answer	calculation
76,3	(75x60)/100= 45 (76x30)/100= 22,8 (85x10)/100= 8,5 45+22,8+8,5=76,3

4 Question 4

4. In the given data set, what is the average score by students in component 1? **[5 Points]**

Answer	Calculation
75,473	Sum of all scores =sum(d2:d301) = 22642 Count total students =count(d2:d301) = 300 Divide scores by student count 22642/300= 75,475

5 Question 5

5. Given that a student scored 80 or more in component 1, what is the probability that this student is neither from an engineering background nor a commerce background? (Do not use the data set for this question) **[10 Points]**

Answer	Calculation
p 0.764	step 1 (75-80)/3= -1,66 (76-80)/5= -0.80 (85-80)/4= 1.25 step 2 -1.66= Z 0.0486 -0.80= Z 0.21186 1.25= z 0.89435 step 3 Z (0.89435- 0.21186)= 0.68249 Z (0.89435- 0.0486)= 0.84575 step 4 (0.68249+0.84575)/2= p 0.764

6 Question 6

6. What percentage of the students who have scored over 80 in component 1 are neither from an engineering background nor a commerce background? **[5 Points]**

Answer	Calculation
42,857	step1 count of all students with a score >80 result= 14 step2 Applied filter to only show category Others step 3 count students category other with a score >80 result= 6 step 4 6/14= 42,857

7 Question 7

7. The final score obtained by a student is the average of the scores in the three components. Draw a sample of the students by choosing students with serial numbers 1, 11, 21, … 291. Assume this to be a random sample.

Answer

A = 74,740

B = [74,13, 75,3591

Calculation A

Mean of component 1

75,0793103

Mean of component 2

74,6724138

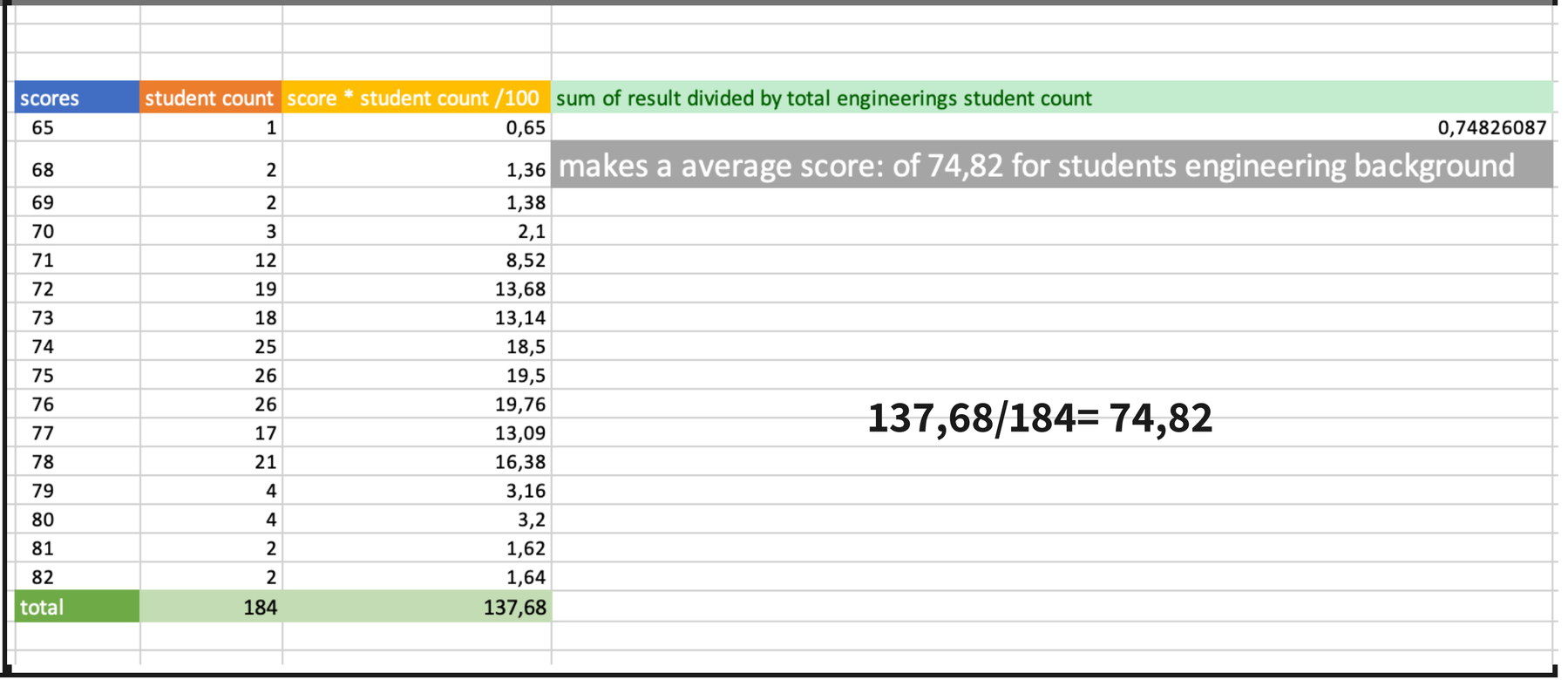
Mean of component 3

74,4689655

(75,0793103 + 74,6724138 + 74,4689655)/3=74,740

values	parameters
74,7402299	mean
75,3591211	confidence +
74,1213387	confidence -
0,43015509	confidence level

8 Question 8

Answer	Calculation
No the average score = 74,82	

scores	student count	score * student count /100	sum of result divided by total engineerings student count
65	1	0,65	0,74826087
68	2	1,36	makes a average score: of 74,82 for students engineering background
69	2	1,38	
70	3	2,1	
71	12	8,52	
72	19	13,68	
73	18	13,14	
74	25	18,5	
75	26	19,5	
76	26	19,76	**137,68/184= 74,82**
77	17	13,09	
78	21	16,38	
79	4	3,16	
80	4	3,2	
81	2	1,62	
82	2	1,64	
total	184	137,68	

Question 9

9. Suppose we choose two random samples of 30 students each from the class. The first sample contains students who have commerce backgrounds, and the second sample contains students who have engineering backgrounds. The average of the scores of the first sample is 75.8333, with a sample standard deviation of 5.7813. The average of the scores of the second sample is 74.7444, with a sample standard deviation of 3.4416. Based on these samples, would you conclude that students with commerce backgrounds scored better than students with engineering backgrounds? (Use $\alpha = 0.05$.) **[15 Points]**

Answer

yes the average score ≠ 74,82

Calculation

minus sd	mean	plus sd	sd	student count	Ha - U / Sd = Zc	z score	
70,052	75,8333	81,6146	5,7813	184	-0,188348641	0.57142	
71,3028	74,7444	78,186	3,4416	103	0,316393538	0.62172	5% better
					zscore minus zscore	0,0503	5%

Question 10.a

a) What is the average score obtained by students with A grades?

Answer	Calculation
A = 77,22	step1 used if function to give the A score =IF(K2 >= 80; "A"; "no") step 2 applied filter to only show A scores step 3 Calculated average with =average function

Question 10.b

b) What is the average score obtained by students with B grades?

Answer	Calculation
B = 74,34	step1 used if function to give the B score =IF(AND(K2 >= 68; K2 <= 79); "B"; "no") step 2 applied filter to only show B scores step 3 Calculated average with =average function

Question 10.c

c) What fraction of students with an engineering background have scored A grades?

Answer	Calculation
C= 184/14 or 14 out of 184	step1 Filter to only show Engineering backround step 2 applied filter to only show A scores step 3 reslut= 14 out of the 184 student in engineering

Question 10.D

d) Among students who scored A grade, what fraction had engineering backgrounds?

Answer	Calculation
D= 46/14 or 14 out of 46	step1 Filter to only show Engineering backround step 2 applied filter to only show A scores step 3 reslut= 14 out of the 46 student in engineering