Answer on Question #64234 – Math – Statistics and Probability

Question

For certain population of students in university, the total students for first, second and third semester listed according to the faculty, are shown in the Table 1 below:

Table 1: Total students

Faculty   Semester

	First Semester	Second Semester	Third Semester
Engineering	200	150	350
Business	320	110	270
Education	400	340	360

(a) If a students is selected at random, find :

i. The probability of the students from the engineering faculty.

ii. The probability of the students second semester and from education faculty.

iii. The probability that students from business faculty given that the students third semester.

Solution

	First Semester	Second Semester	Third Semester	Total
Engineering	200	150	350	700
Business	320	110	270	700
Education	400	340	360	1100
Total	920	600	980	2500

(i) $P(Engineering\ faculty) = \frac{200+150+350}{2500} = \frac{700}{2500} = 0.28.$

(ii) $P(Second\ semester, Education\ faculty) = \frac{340}{2500} = 0.136.$

(iii) $P(Business\ faculty|Third\ semester) = \frac{P(Business\ faculty, Third\ semester)}{P(Third\ semester)} =$

$$= \frac{270}{980} \approx 0.2755$$

Answer: (i) 0.28; **(ii)** 0.136; **(iii)** 0.2755.