Answer on Question #45575 – Math - Statistics and Probability

Problem.

Mehwish will graduate in 3 months with a Master's degree in Business Administration. Her college's placement office indicates that the probability of receiving a job offer as the result of any given interview is about 0.08 and is statistically independent from interview to interview.

i) What is the probability that Mehwish will not get a job offer in any of her next four interviews?

ii) If she has three interviews per month, what is the probability that she will have at least one job offer by the time she completes her studies?

iii) What is the probability that in her next five interviews she will get job offers on the third and fifth interviews only?

Solution.

(i) The probability that Mehwish will not get a job offer on some interview is

$$1 - 0.08 = 0.92.$$

The probability that Mehwish will not get a job offer in any of her next four interviews is

$$0.92^4 \approx 0.716.$$

(ii) If she has three interviews per month, then she will visit $3 \times 3 = 9$ interwies by the time she completes her studies.

The probability that Mehwish will not get a job offer in any of this nine interviews is

$$0.92^9 \approx 0.472.$$

Then the probability that Mehwish will have at least one job offer by the time she completes her studies is

$$1 - 0.92^9 \approx 0.529.$$

(iii) The probability that in her next five interviews she will get job offers on the third and fifth interviews only is

$$0.92 \cdot 0.92 \cdot 0.08 \cdot 0.92 \cdot 0.08 \approx 0.005$$

Answer: (i) $0.92^4 \approx 0.716$; (ii) $1 - 0.92^9 \approx 0.529$; (iii) $0.92^3 \cdot 0.08^2 \approx 0.005$