

## Answer on Question #83341 – Math – Statistics and Probability

### Question

A student answers eight MCQ type of questions. Each question has five answers with only one correct answer. Compute the probability of the student answering four questions correctly.

### Solution

The probability of a student to ask each question correctly is

$$\frac{1}{5} = 0.2.$$

The number of correct answers  $X$  is a binomial random variable with  $n = 8$  (the total number of questions) and  $p = 0.2$  (the probability of a correct answer).

Hence

$$P(X = 4) = \binom{8}{4} \cdot 0.2^4 \cdot (1 - 0.2)^{8-4} = 70 \cdot 0.0016 \cdot 0.4096 = 0.0459.$$