A multiple-choice test consists of 10 questions, each with four possible answers. If a student randomly guesses on each question, what is the probability of getting at least 8 questions correct? Data: Number of questions (n) = 10, Number of possible answers per question (k) = 4.

**Answer**

**Why this is the probability:**

* **Each of the 10 questions has 2 possible answers (True or False), so the student’s whole set of answers can be any one of**

**= 1024**

**different “right/wrong” patterns.**

**(We are assuming the student guesses, so each of the 1024 patterns is equally likely.)**

* **To get exactly one correct answer we must:**
  1. **choose which of the 10 questions is answered correctly 10 choices;**
  2. **answer all the remaining 9 questions incorrectly only one way to do this for each of those questions.**

**Hence there are:**

**10 × 1 = 10**

**favourable patterns.**

**Probability = favourable patterns ÷ total patterns**