

## SOLUTIONS FOR QUIZ 4

In a certain class, there are 10 math majors, 12 physics majors, and 18 computer science majors. How many ways are there to select a group of 15 students, consisting of 4 math majors, 5 physics majors, and 6 computer science majors?

There are  $\binom{10}{4}$  ways to select the math majors (the order of selection doesn't matter, hence we need the number of 4-combinations of 10 objects). For each selection of math majors, there are  $\binom{12}{5}$  ways to pick the physics majors. Furthermore, there are  $\binom{18}{6}$  ways to pick the CS majors. Applying the product rule, we see that the total number of selections equals  $\binom{10}{4}\binom{12}{5}\binom{18}{6}$ .

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