1. [10 points] A mathematics department consists of
   
   • 15 full professors
   • 10 associate professors
   • 5 assistant professors.

   A committee of 6 is selected at random from the faculty of the department. What is the probability that the committee will consist of
   
   • 2 full professors
   • 2 associate professors
   • 2 assistant professors?
Answers

1. \[
\frac{\binom{15}{2} \binom{10}{2} \binom{5}{2}}{\binom{30}{6}}.
\]