**Situation:** It is a cold, dark, and stormy winter morning. Your boss has called a 5 a.m. meeting before she leaves to catch a flight to the Bahamas for her vacation, and there is a power outage. Your alarm does not go off and you sit up in bed with a fright at what you guess is about 4:45 a.m. You are trying frantically to get dressed and **you need to reach into your sock drawer to get two matching socks in the dark.** Naturally, your mind wanders to solving probability equations. Your sock drawer contains 20 total socks which consist of 10 matched pairs of socks. All of them are only black or white and they are loose, disorganized randomly, and not bound together. This means you have 10 black socks and 10 white socks in your disorganized drawer. You do not have a light source because your phone did not charge, and you cannot find a flashlight or a candle. You are completely in the dark! You have to get dressed and go! You have to math fast!

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For the remaining problems, let's go back to the assumption that there are 20 total socks, 10 white and 10 black. This makes 10 total matching pairs of 5 pair of white and 5 pair of black.

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