

Question 24

Show that if you pick three socks from a drawer containing just blue socks and black socks, you must get either a pair of blue socks or a pair of black socks.

Proof by contradiction:

Suppose we don't draw a pair of blue socks or a pair of black socks. Then we drew at most one blue sock and one black sock. However, one of each socks is only two socks. But we are drawing three socks. Therefore our supposition that we did not get a pair of blue socks or a pair of black socks is incorrect. Therefore, we must have drawn a pair of blue socks or a pair of black socks.