Probability Assignment - 1

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CONTENTS

I. PROBLEM

NCERT class -11 , Ex: 16.4 , Q1 :
A box contains 10 red marbles , 20 Blue marbles and 30 green marbles . 5 marbles are drawn from the box , what is the probability that
1) all will be blue
2) atleast one will be green

II. SOLUTION

From the question it is given that ,
No. of red marbles in the box = 10.
No. of blue marbles in the box = 20.
No. of green marbles in the box = 30.
So,The total No. of marbles in the box =60.
Number of ways of drawing 5 marbles from 60 marbles = $^{60}C_5$
1) All the drawn marbles will be blue if we draw 5 marbles out of 20 marbles.
Number of ways of drawing 5 Blue marbles from 20 blue marbles = $^{20}C_5$
then ,
the probability that all marbles will be blue = $\frac{^{20}C_5}{^{60}C_5}$
2) Number of ways in which the drawn marble is not green = $^{30}C_5$
Probability that atleast one marble is green = $1 - \frac{^{30}C_5}{^{60}C_5}$