

### Answer on Question #47198 – Math – Statistics and Probability

Three balls are drawn from a box containing 6 red marbles, 4 white marbles and 5 blue marbles. Find the probability that they are drawn in the order: red, white, and blue if each ball is drawn with replacement

8/225

1/225

4/225

6/225

#### Solution

For the first draw, there is a total of 15 balls in the box, 6 red plus 4 white plus 5 blue. You have a 6 in 15 chance of drawing a red ball. Dividing 6 by 15 gives you the probability of drawing a red ball:  $6/15=2/5=0.4$  or 40%. You then put that red ball back into the box. On the second draw you have a 4 in 15 chance of drawing a white ball. So the probability of getting a white ball on this second draw will be  $4/15$ . You then put that white ball back into the box. On the third draw you have a 5 in 15 chance of drawing a blue ball. So the probability of getting a blue ball on this third draw will be  $5/15$ .

The probability of drawing a red, a white and a blue balls for the first, the second and the third draws respectively is the product of these three probabilities.

So it will be

$$6/15 \text{ times } 4/15 \text{ times } 5/15 = (6*4*5)/(15*15*15) = 120/3375 = (15*8)/(15*225) = 8/225 = 0.036.$$