

SOLUTION TO 10.13.3.41

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Question: A bag contain 24 balls of which x balls are red, $2x$ are white and $3x$ are blue. A ball is selected at random, What is the probability that it is

a) not red ?

b) white ?

Solution: Total number of balls :

$$x + 2x + 3x = 24 \quad (1)$$

$$\implies 6x = 24 \quad (2)$$

$$\implies x = 4 \quad (3)$$

Let X be a Random variable such that

Parameter	Value	Description
X	0	Red ball
	1	White ball
	2	Blue ball

a) Required probability:

$$= 1 - \Pr(X = 0) \quad (4)$$

$$= 1 - \frac{x}{24} \quad (5)$$

$$= 1 - \frac{1}{6} \quad (6)$$

$$= \frac{5}{6} \quad (7)$$

b) Required probability:

$$\Pr(X = 1) = \frac{2x}{24} \quad (8)$$

$$= \frac{1}{3} \quad (9)$$