black balls. The person who selects the ball wins $1.00 for each white ball selected and loose $1.00 for each red ball selected. Let x be the total winnings. Find the probability distribution of X.

7. Find the mean and variance of a R.V. x with

pdf $$f(x) = \begin{cases} \frac{x}{a^2} e^{-x^2/2a^2}, & x > 0 \\ 0 & \text{elsewhere} \end{cases}$$

1. What is the probability that a leap year selected at random contains 53 Sundays.

2. Ten chips numbered 1 through 10 are mixed in a bowl. Two chips numbered (x, y) are drawn from the bowl successively and without replacement. What is the probability that $x+y=10$.

3. What is the probability that a year selected at random contains 53 Sundays.

4. Two cards are drawn from the ordinary pack. If either of them is a king or if both are kings both cards are replaced. Another card is then drawn at random, what is the probability that it is a king?

5. A bag contains 3 coins one of which is coined with ~~two~~ heads and other two coins are normal and not biased. A coin is chosen at random and tossed four times in succession. If head turns up each time what is the probability that this is a two headed coin?

6. Three balls are randomly selected from an urn containing 3 white, 3 red and 5