

1. Solve for  $x$ :

$$\sqrt{6x+7} - (2x-7) = 0 \tag{1}$$

2. There are 100 cards in a bag on which numbers from 1 to 100 are written. A card is taken out from the bag at random. Find the probability that the number on the selected card
  - (a) is divisible by 9 and is a perfect square.
  - (b) is a prime number greater than 80.
3. A motor boat whose speed is  $24km/hr$  in still water takes 1 hour more to go  $32km$  upstream than to return downstream to the same spot. Find the speed of the stream.
4. Two pipes running together can fill a tank in  $11\frac{1}{9}$  minutes. If one pipe takes 5 minutes more than the other to fill the tank separately, find the time in which each pipe would fill the tank separately.