

$$\begin{aligned} \text{outcomes} &= 6^2 \\ &= 36 \end{aligned}$$

1 1	2 1	3 1	4 1	5 1	6 1
1 2	2 2	3 2	4 2	5 2	6 2
1 3	2 3	3 3	4 3	5 3	6 3
1 4	2 4	3 4	4 4	5 4	6 4
1 5	2 5	3 5	4 5	5 5	6 5
1 6	2 6	3 6	4 6	5 6	6 6

(19) i outcomes (1,1), (2,2), (3,3), (4,4), (5,5), (6,6)  
 $P(\text{same no. on 2 dice}) = \frac{6}{36} = \frac{1}{6}$

$$\begin{aligned} P(\text{different no. on 2 dice}) &= 1 - \frac{1}{6} \\ &= \frac{5}{6} \end{aligned}$$

(20) i outcomes (1,6), (2,5), (3,4), (4,3), (5,2), (6,1)  
 $P(\text{sum 7}) = \frac{6}{36} = \frac{1}{6}$

(ii)  $P(\text{sum prime no.}) = \frac{15}{36} = \frac{5}{12}$

$$P(\text{sum 1}) = 0$$