PROBABILITY

1. One card is drawn at random from a normal pack of 52 cards.
What is the probability of drawing
   (i) A red card?
   (ii) A black card?
   (iii) A heart?
   (iv) A picture card?
   (v) The ace of spades?

2. A coin is tossed 3 times. What is the probability of tossing
   (i) Three heads?
   (ii) Two heads and a tail?
   (iii) At least one head?
   (iv) No heads.

3. A drawer contains 10 black socks and 10 brown socks. If Josh goes to the drawer in the dark and chooses two socks at random, what is the probability of him choosing
   (i) Two black socks?
   (ii) A matching pair?

4. The drawer now contains 12 black socks and 8 brown socks. If Josh again goes to the drawer in the dark and chooses two socks at random, what is the probability of him choosing
   (i) Two black socks?
   (ii) A matching pair?

5. Two dice are thrown and the score is taken as the sum of the dots on the two uppermost faces.
   (i) Draw a grid showing all of the possible outcomes. Use your grid to determine
   (ii) The probability of throwing 12.
   (iii) The probability of throwing an even total.
   (iv) The probability of throwing a total greater than 7.
   (v) The probability of throwing a 1 on at least one of the dice?

Answers:

1. (i) $\dfrac{1}{2}$ (ii) $\dfrac{1}{2}$ (iii) $\dfrac{1}{4}$ (iv) $\dfrac{3}{13}$ (v) $\dfrac{1}{52}$

2. (i) $\dfrac{1}{8}$ (ii) $\dfrac{3}{8}$ (iii) $\dfrac{7}{8}$ (iv) $\dfrac{1}{8}$

3. (i) $\dfrac{9}{38}$ (ii) $\dfrac{9}{19}$

4. (i) $\dfrac{33}{95}$ (ii) $\dfrac{47}{95}$

5. (i)

	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

(ii) $\dfrac{1}{36}$ (iii) $\dfrac{1}{2}$ (iv) $\dfrac{5}{12}$ (v) $\dfrac{11}{36}$