

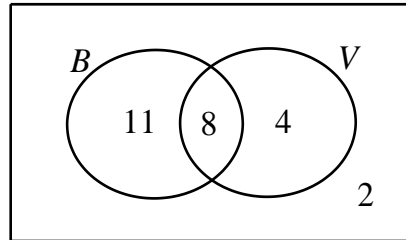


Quiz 2 - Probability of Events

■ calculator is allowed on all questions ■

[total marks on quiz: **40 marks**]

1. The Venn diagram below shows the number of students in a particular class who play basketball, B , and the number of students in the class that play volleyball, V .



If a student is chosen at random from the class, find the probability that the student ...

- (a) plays basketball;
- (b) does not play volleyball;
- (b) plays at least one of the two sports;
- (d) plays volleyball if it is known that the student plays basketball. **[6 marks]**
2. A fair coin is tossed four times. Find the probability that you get:
- (a) exactly four heads; (b) at least one tail. **[5 marks]**
3. Three different numbers are chosen at random from the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9. Find the probability that the numbers chosen will be
- (a) all odd; (b) one odd and two even numbers. **[6 marks]**
4. Given A and B are independent events, and $p(A) = 0.64$, $p(A \cup B) = 0.73$, find $p(B)$. **[6 marks]**
5. A bag contains twelve marbles. Eight of the marbles are blue and four of them are green. If two marbles are chosen (without replacement), what is the probability of getting:
- (a) two blue marbles;
- (b) one blue marble and one green marble, in any order. **[6 marks]**
6. Louis and Pierre play a match consisting of five games, each of which must be won or lost. In each of the first three games the probability that Louis will win is $\frac{2}{3}$ and in the remaining two games the probability is $\frac{3}{4}$. Find the probability that Louis will win four or more of the games. **[5 marks]**
7. If $P(X) = 0.8$, $P(Y) = 0.6$ and X and Y are independent events, find the probability that:
- (a) both X and Y occur;
- (b) X or Y occur but not both X and Y . **[6 marks]**