

## Section 2: Probability distributions

### Exercise level 2

1. A bag contains 2 red discs and 3 yellow discs. Two discs are removed without replacement. Let  $X$  be the number of yellow discs removed.

Tabulate the probability distribution of  $X$ .

2. The probability distribution of a discrete random variable  $X$  is given by

$$P(X = r) = \frac{r}{10} \text{ for } r = 1, 2, 3, 4$$

Tabulate the probability distribution of  $X$ .

3. The probability distribution of a discrete random variable  $Y$  is given by

$$P(Y = r) = kr \text{ for } r = 2, 4, 6, 8$$

Find the value of  $k$  and tabulate the probability distribution of  $Y$ .

4. The probability distribution of a discrete random variable  $Z$  is given by

$$P(Z = r) = kr^2 \text{ for } r = 1, 2, 3, 4$$

Find the value of  $k$  and tabulate the probability distribution of  $Z$ .