

Section 2: Probability distributions

Solutions to Exercise level 1

1.

r	1	2	3	4	5	6	7	8
$P(X=r)$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

2. $k + 2k + 3k + 2k + k = 1$

$9k = 1$

$k = \frac{1}{9}$

3.

r	1	2	6
$P(Y=r)$	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{3}{8}$

4.

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

r	2	3	4	5	6	7	8	9	10
$P(Z=r)$	$\frac{1}{25}$	$\frac{2}{25}$	$\frac{3}{25}$	$\frac{4}{25}$	$\frac{1}{5}$	$\frac{4}{25}$	$\frac{3}{25}$	$\frac{2}{25}$	$\frac{1}{25}$