Marked example 1

Paper 1 style · No calculator

1 5 marks SL 4.7

●○○ Routine

The probability distribution of a discrete random variable X is

x	1	2	3	4
$P(X = x)$	0.1	k	0.3	$2k$

(a) Find the value of k. **[2]**

(b) Find $E(X)$. **[2]**

(c) Find $P(X \geq 3)$. **[1]**

MARKSCHEME (a)

$0.1 + k + 0.3 + 2k = 1$ **(M1)**

$k = 0.2$ **A1**

Total 2 marks

Note The probabilities add up to 1.

MARKSCHEME (b)

$1 \times 0.1 + 2 \times 0.2 + 3 \times 0.3 + 4 \times 0.4$ **(M1)**

$E(X) = 3$ **A1**

Total 2 marks

MARKSCHEME (c)

$0.3 + 0.4 = 0.7$ **A1**

Total 1 mark

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