Question	Scheme	Marks	AOs
2	$x = 0$	B1	2.2a
	$\mathrm{P}(A) = 0.1 + z + y \quad \mathrm{P}(C) = 0.39 + z[+x] \quad \mathrm{P}(A \text{ and } C) = z$	M1	2.1
	$\mathrm{P}(A \text{ and } C) = \mathrm{P}(A) \times \mathrm{P}(C) \rightarrow z = (0.1 + z + y) \times (0.39 + z[+x])$	M1	1.1b
	$\left[\sum p = 1\right]$ $0.06 + 0.3 + 0.39 + 0.1 + z + y[+x] = 1 \rightarrow \quad [z + y[+x] = 0.15]$	M1	1.1b
	Solving (simultaneously) leading to $\underline{z = 0.13} \quad \underline{y = 0.02}$	A1	1.1b
			(5 marks)

Notes

B1: for $x = 0$, may be seen on Venn diagram

M1: Identifying the probabilities required for independence and at least 2 correct
These must be labelled
If there are no labels, then this may be implied by $z = (0.1 + z + y)(0.39 + z\ [+x])$, allow one numerical slip

Allow e.g.
$\mathrm{P}(A') = 0.39 + 0.30 + 0.06[+x] \quad \mathrm{P}(C) = 0.39 + z[+x] \quad \mathrm{P}(A' \text{ and } C) = 0.39$
[Not on spec. but you may see use of conditional probabilities]

M1: Use of independence equation with their labelled probabilities in terms y, z [and x]
All their probabilities must be substituted into a correct formula
Sight of a correct equation e.g. $z = (0.1 + z + y)(0.39 + z\ [+x])$ scores M1M1

M1: Using $\Sigma p = 1$
Implied by $[x +]\ y + z = 0.15$
or their $x + y + z = 0.15$ where x, y, and z are all probabilities
or e.g. $\mathrm{P}(A) = 0.25$

A1: both $y = 0.02$ and $z = 0.13$