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|---|-----|--|--|------------------------|--------------------------|--|
| 9 | (a) | | $0.1 + 0.3 + q + 2q + 3q = 1$ $q = 0.1$ | M1 A1 | 1.2 1.1 | Setting sum of values equal to 1 |
| | | | | [2] | | |
| 9 | (b) | | $(0.1 + 0.3 + 0.1 + 0.2 =) 0.7$ | B1 | 1.1 | Or $1 - p(X = 5)$ |
| | | | | [1] | | |
| 9 | (c) | | 0.1×0.3 seen or 0.03 seen | M1 | 1.1 | |
| | | | $0.1 \times 0.3 + 0.1 \times 0.3 = 0.06$ | A1 | 1.1 | 0.06 o.e $\frac{6}{100}$ or $\frac{3}{50}$ etc |
| | | | | [2] | | |
| 9 | (d) | | 0.098314...correct to 2 or more sf BC | B1 | 1.1 | By using e.g $X \sim B(50, 0.3)$ and finding $P(X = 17)$ |
| | | | | [1] | | |