| Question Number | Scheme | | Marks |
|---|---|---|---|
| 3(a) | $\left[\mathrm{P}(Y=y)=\right]\frac{1}{6}$ [$y$ =] 1, 2, 3, 4, 5, 6 | | B1dB1 |
| | | | (2) |
| (b) | [Discrete] **uniform** [distribution] | | B1 |
| | | | (1) |
| (c) | $\mathrm{E}(Y)=\frac{6+1}{2}[=3.5]$ or $\mathrm{E}(Y)=\frac{1+2+3+4+5+6}{6}[=3.5]$ | $4Y+3$: 7, 11, 15, 19, 23, 27 | M1 |
| | $\mathrm{E}(4Y+3)=4\times"3.5"+3$ | $\mathrm{E}(4Y+3)=\frac{"7"+"27"}{2}$ or $\frac{"7"+"11"+"15"+"19"+"23"+"27"}{6}$ | M1 |
| | **17** | | A1 |
| | | | (3) |
| | | | **Total 6** |

| | | |
|---|---|---|
| (a) | **B1** | for identifying $\mathrm{P}(Y=y)=\frac{1}{6}$ as the only probability<br>Ignore labels. (May be seen in a table). Must be seen in part (a).<br>Stating or using Normal, Binomial (or other distribution) is B0 |
| | **dB1** | Dep on previous B1 for $y$ = 1, 2, 3, 4, 5, 6 Ignore labels. (May be seen in a table) Must be seen in part (a). |
| | **SC** | Use of inaccurate value for $\frac{1}{6}$ can score B0B1 if otherwise fully correct<br>e.g. |

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 0.167 | 0.167 | 0.167 | 0.167 | 0.167 | 0.167 |

| | | |
|---|---|---|
| (b) | **B1** | do not allow continuous uniform [distribution] do not allow Normal uniform |
| (c) | **M1** | a correct method to find E(Y) (implied by 3.5)<br>**or** sight of 7, 11, 15, 19, 23, 27 (allow one slip)<br>$1\times\frac{1}{6}+2\times\frac{2}{6}+3\times\frac{3}{6}+4\times\frac{4}{6}+5\times\frac{5}{6}+6\times\frac{6}{6}$ is M0 |
| | **M1** | use of $4\mathrm{E}(Y)+3$ ft their $\mathrm{E}(Y)$ must be clear that they are using their E(Y)<br>e.g. $4\left(\frac{1}{6}\right)+3$ is M0 |

| | | |
|---|---|---|
| | | **or** a correct method to find E(4*Y* + 3) ft their 7, 11, 15, 19, 23, 27 |
| | **A1** | cao 17 scores 3/3 |