A)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **a** | **b** | **c** | **d** | **e** | **f** |
| **0** | **+8** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **1** | 0 | 0 | -2 | +2 | 0 | 0 | -2 | +2 | 0 | 0 | -2 | +2 | 0 | 0 | -2 | **-6** |
| **2** | 0 | +2 | +2 | 0 | 0 | **+6** | -2 | 0 | 0 | -2 | -2 | 0 | 0 | +2 | +2 | 0 |
| **3** | 0 | -2 | 0 | -2 | 0 | +2 | **+4** | -2 | 0 | +2 | **-4** | -2 | 0 | -2 | 0 | -2 |
| **4** | 0 | 0 | +2 | +2 | 0 | 0 | -2 | -2 | +2 | -2 | 0 | **-4** | +2 | -2 | **-4** | 0 |
| **5** | 0 | **+4** | 0 | 0 | **+4** | 0 | 0 | 0 | +2 | +2 | -2 | +2 | -2 | -2 | -2 | +2 |
| **6** | 0 | +2 | 0 | -2 | 0 | -2 | 0 | +2 | -2 | 0 | -2 | **-4** | -2 | 0 | 0 | 0 |
| **7** | 0 | +2 | -2 | 0 | **+4** | +2 | +2 | 0 | -2 | 0 | **+4** | -2 | +2 | 0 | 0 | -2 |
| **8** | 0 | +2 | -2 | 0 | 0 | -2 | -2 | **-4** | +2 | 0 | 0 | -2 | -2 | 0 | **+4** | -2 |
| **9** | 0 | -2 | 0 | +2 | 0 | +2 | 0 | -2 | +2 | **+4** | +2 | 0 | -2 | **+4** | -2 | 0 |
| **a** | 0 | 0 | **-4** | 0 | 0 | 0 | 0 | **-4** | -2 | -2 | -2 | +2 | +2 | +2 | -2 | +2 |
| **b** | 0 | 0 | -2 | -2 | 0 | 0 | +2 | +2 | **+6** | -2 | 0 | 0 | +2 | +2 | 0 | 0 |
| **c** | 0 | +2 | **+4** | -2 | 0 | -2 | 0 | -2 | 0 | +2 | 0 | +2 | **+4** | +2 | 0 | -2 |
| **d** | 0 | +2 | -2 | **-4** | **-4** | +2 | -2 | 0 | 0 | +2 | +2 | 0 | 0 | -2 | -2 | 0 |
| **e** | 0 | 0 | -2 | +2 | 0 | 0 | -2 | +2 | 0 | **+4** | -2 | -2 | **+4** | 0 | +2 | +2 |
| **f** | 0 | **-4** | 0 | **-4** | **+4** | 0 | **-4** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Where a bias of significance is bolded

B) Take mapping 5 -> 1

bias +4

bias +6

bias -6

bias -6

Probability = (¾)

Probability = (⅞)

Probability = (½) + 2(¾ - ½ )(⅞ - ½) = **(22/32)**

Probability = (⅛)

Probability = (⅛)

Probability = (½) + 2(⅛ - ½)2 = **(25/32)**

As

We may write

Where

Probability = (½) + 22(¾ - ½)(⅞ - ½)(⅛ - ½)2 = **(155/256)** = 0.60546875