

Answer Key

1.
 - $n = 10$
 - $k = 3$
 - $p = 1/2$
 - $C(10, 3) \cdot (1/2)^3 \cdot (1/2)^7 = \frac{15}{128}$

2.
 - | | | repeats n | successes k | probability p |
|---|-------------------|-------------|---------------|-----------------|
| A | Getting five 1's | 7 | 5 | 1/6 |
| B | Getting six 1's | 7 | 6 | 1/6 |
| C | Getting seven 1's | 7 | 7 | 1/6 |

A. $C(n, k) \cdot p^k \cdot (1 - p)^{n-k} = C(7, 5) \cdot (1/6)^5 \cdot (5/6)^2$

B. $C(n, k) \cdot p^k \cdot (1 - p)^{n-k} = C(7, 6) \cdot (1/6)^6 \cdot (5/6)^1$

C. $C(n, k) \cdot p^k \cdot (1 - p)^{n-k} = C(7, 7) \cdot (1/6)^7 \cdot (5/6)^0$

- $Prob(\text{ at least five 1's }) = C(7, 5) \cdot (1/6)^5 \cdot (5/6)^2 + C(7, 6) \cdot (1/6)^6 \cdot (5/6)^1 + C(7, 7) \cdot (1/6)^7 \cdot (5/6)^0$

3. $n = 10, k = 1, p = (1/6)$
 $C(10, 1) \cdot (1/6)^1 \cdot (5/6)^9 \approx 0.323$