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Final Exam

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Q. 4. 2. a

Probability to receive 'n' heads & a tail.

$$P(n \text{ heads} \& 1 \text{ tail}) = {}^{n+1}C_{n} \, p^{n} * (1-p)$$

Q. 4. 2. b

Since these events are independent, we can multiply them to get total probability.

$$P(\text{All Events}) = \left[{}^{1}C_{0} \, p^{0} * (1-p) \right] \times \left[{}^{1}C_{0} \, p^{0} * (1-p) \right]$$

$$\times \left[{}^{2}C_{1} \, p^{1} (1-p) \right] \times \cdots\cdots$$

$$\propto \left[{}^{7}C_{6} \, p^{6} (1-p) \right]$$