1. $P = \frac{15\times14\times13\times12\times11\times10\times9\times8}{15^8}$

2. Total number of numbers that meets the requirement is: $5\times4\times3\times5\times4 + 5\times4\times5\times4\times3 + 5\times4\times3\times2\times5 + 5\times4\times5\times3\times4$

$= 1200 + 1200 + 600 + 1200 = 4200$

$\therefore P_{(No.)} = \frac{4200}{100000} = \frac{42}{1000}$

$P_{(ans)} = 0.042^5 \times 0.958^3 \times \binom{8}{5} = 0.00000643474 0038$

3. $P(A) = 1 - \left(\frac{1}{2}^3 + \frac{1}{2}^3\right)$

$= \frac{3}{4}$

$P(A|B) = \frac{1}{2} \neq P(A)$

$\therefore$ A and B are not independent

4. $P = \frac{4\times13\times12\times11\times10}{\binom{52}{5}}$

5. $P_{(noStar)} = \left(\frac{1}{2}\right)^5 \cdot 5 = \frac{1}{32}\cdot5 = 0.15625$

$P_{(Star)} = (0.7)^4 \cdot 0.3\times5 = 0.36015$

$P(\text{StarPlayed}) = \frac{P(\text{star})\cdot0.75}{0.75\cdot P(\text{star}) + 0.25\cdot P(\text{noStar})} = 0.8737$