31) Balls numbered $1 \rightarrow 25$

$n(s) = 25$

$n(<5) = 4$ ie $e_1 = \{1,2,3,4\}$

$n(>20) = 5$ ie $e_2 = \{21,22,23,24,25\}$

$n(e_1 < 5 \wedge e_2 > 20) = 0$ $e_1 \cap e_2 = \emptyset$

$P(e_1 \cup e_2) = \dfrac{4+5}{25} = \dfrac{9}{25}$

57) A)

$n(\text{sum} = 5) = 4$ Odds of rolling sum = 5

$n(\text{sum} \neq 5) = 32$ are   4 to 32

                                = 1:8

B) $8