

2a.  $\{H1, H2, H3, H4, T5, H6, T1, T2, T3, T4, T5, T6\}$

b.  $n(S) = 12, n(E) = 3, P(E) = \frac{3}{12}$

c.  $n(S) = 12, n(E) = 2, P(E) = \frac{2}{12}$

d.  $\frac{3}{12}$

6a.  $n(S) = 52, n(E) = 13, P(E) = \frac{13}{52}$

b. M.E.  $P(E_1) = \frac{13}{52}, P(E_2) = \frac{13}{52}$

$\Rightarrow P(E_1 \cup E_2) = \frac{26}{52}$

c. M.E.  $\frac{13}{52} + \frac{13}{52} + \frac{13}{52} = \frac{39}{52}$

9a.  $n(S) = 18, n(E) = 6, P(E) = \frac{6}{18}$

b. ~~scribbles~~  $\left(\frac{6}{18}\right)\left(\frac{5}{17}\right) = \frac{30}{255}$

16a.  $\{11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 31, \dots, 61, 62, 63, 64, 65, 66\}, n(S) = 36$

b.  $E = \{16, 61, 25, 52, 34, 43\}, n(E) = 6 \Rightarrow \frac{6}{36}$

c.  $E = \{36, 63, 45, 54\}, n(E) = 4 \Rightarrow \frac{4}{36}$

d.  $E = \{11, 22, 33, 44, 55, 66\}, n(E) = 6 \Rightarrow \frac{6}{36}$

e.  $1 - P(\text{doublets}) = 1 - \frac{6}{36} = \frac{30}{36}$

f. From part c,  $\frac{4}{36}$

$E = \{55, 56, 65, 66\}, n(E) = 4$

M.E.  $\Rightarrow \frac{4}{36} + \frac{4}{36} = \frac{8}{36}$

17a.  $S = \{BBBB, BGBB, BBGB, BBBG, GBBB, GBGB, GGBB, GBGB, BBGG, BBGG, \dots\}$

$n(S) = 2 \cdot 2 \cdot 2 \cdot 2 = 16$

$n(E) = 1 \Rightarrow P(E) = \frac{1}{16}$

$$19. \left( \frac{18}{38} \right)$$

$$20a. n(s) = 6! \quad \frac{1}{6!} \approx 0.0014$$

$$b. \frac{1}{6!} \approx 0.0014$$

$$21. {}^{14}C_6 = 13,983, 2b.$$

$$n(s) = 1 \quad P(s) = 0.00000007$$

$$24. n(s) = {}^{10}C_3 = 120$$

$$n(s) = 3(2 = 3)$$

$$P(s) \approx \frac{3}{120} \approx 0.025$$

$$26. n(s) = 6!$$

$$n(s) = 1$$

$$\frac{1}{6!} \approx 0.0014$$

$$31a. M.E.$$

$$b. N.M.E.$$

$$33a. M.E. \quad \frac{3}{6} + \frac{3}{6} = \frac{6}{6} = 100\%$$

$$b. N.M.E. \quad \frac{3}{6} + \frac{2}{6} - \frac{1}{6} = \frac{4}{6}$$

$$34a. N.M.E. \quad \frac{2}{6} + \frac{4}{6} = \frac{6}{6} - \frac{1}{6} = \frac{5}{6}$$

$$b. M.E. \quad \frac{2}{6} + \frac{2}{6} = \frac{4}{6}$$

$$36a. N.M.E. \quad \frac{13}{52} + \frac{4}{52} - \frac{1}{52} = \frac{16}{52}$$

$$b. N.M.E. \quad \frac{16}{52}$$

$$41. {}^{14}C_5 =$$

$$\frac{{}^6C_5 + {}^8C_5}{{}^{14}C_5} \approx 0.031$$

$$50) \text{ Incl. } a. \frac{4}{52} + \frac{4}{52} = \frac{16}{52}$$

$$55) i. \frac{5}{7} \cdot \frac{4}{6} = \frac{20}{42}$$

$$ii. \frac{3}{7} \cdot \frac{5}{7} = \frac{15}{49}$$

$$iii. \frac{8}{14} \checkmark$$

$$61) n(s) = 20!$$

$$n(s) = \frac{38}{20!} \quad P(s) \approx 0$$

$$(1112)$$