(Q) ~~SENE~~

SENTENCE PROPERTY

TFOUFOOF → Q, S, P, Q, F, S, U, Z

19, 5, 14, 20, 5, 14, 3, 5

20,

(P) WELCOME WEATHER

CEELMOW AEEHRW

(Q) IMPEND = 61

DISH = 40

∴ FRUIT = 6 + 16 + 21 + 9 + 20 = 72

(Q) BUG = 90 = 2 + 21 + 7

ALMS = 1, 12, 13, 19 = 180

CADET = 3, 1, 4, 5, 20.

733 × 5

= 165

(8):

2 ways back

1. B = 10!

2B = 10

9 ⇒ 9!

9! × 2

⇒ 10!

∴ $\frac{9! \times 2!}{10!} = \frac{2}{10} = \frac{1}{5}$

(9) odd/even?

10 → even

10 → odd

$C(20,2) = 190$

$10 \times 10 = 100$

$\frac{100}{190} = \frac{10}{19}$

(9) 3 + 4 + 6 + 2 = 15

$C(15,3) = \frac{15!}{3!(15-3)!} = 455$

$C(2,1) \times C(4,2)$

$C(2,1) \times (4,2) = 2 \times 6 = 12$

~~+~~ 12

455

(a) tot = 10

gr = 4

n-g = 6

ad = 63

$1-P \Rightarrow \frac{\binom{6}{3}}{\binom{10}{3}} = \frac{20}{120} = \frac{1}{6}$

$1 - \frac{1}{6} = \frac{5}{6}$

=

(b) $(A_1, A_2), (B_1, B_2), (C_1, C_2), (D_1, D_2), (E_1, E_2)$

tot $= \binom{10}{5} = 252$

Exactly 2 couples

$5 : \binom{5}{2}$

way $\binom{5}{2} \times \binom{6}{1} = 10 \times 6 = 60$

$\frac{60}{252} = \frac{5}{21}$

=

(c) $q = 1 - 0.2 = 0.8$

4 tickets

$1-P \Rightarrow 0.8 \times 0.8 \times 0.8 \times 0.2 = 0.8^4 = 0.4096$

$1 - 0.4096 = 0.5904$

(4) 31 red } balls
26 green }

$P = 0.5$

$P = 38/38 = 1$

$P = 1/27$

$0.5 \times 1 + 0.5 \times \frac{1}{27} = 0.5 + \frac{1}{54} = \frac{27+1}{54} = \frac{28}{54} = \frac{14}{27}$

(5) Total $6 + 8 + 7 = 21$

$P(\text{Red}) = 6/21 = 2/7$

$P(\text{not red}) = 5/7$

$P(3 \text{ red}) \rightarrow ?$

$P(4 \text{ red}) \rightarrow ?$

$P(5 \text{ red}) \rightarrow$

$P(4 \text{ red}) = \binom{5}{4} \left(\frac{2}{7}\right)^4 \left(\frac{5}{7}\right)^{5-4}$

$= \binom{5}{3} \left(\frac{2}{7}\right)^3 \left(\frac{5}{7}\right)^2 = 10 \times \frac{8}{343} \times \frac{25}{49} =$

$\Rightarrow \frac{10 \times 200}{16807} = \frac{2000}{16807} \Rightarrow P(3 \text{ red})$

$P(4 \text{ red}) = \binom{5}{4}\left(\frac{2}{7}\right)^4\left(\frac{5}{7}\right)^1 = 5 \times \frac{16}{2401} \times \frac{5}{7}$

$= \frac{400}{16807}$

$P(5 \text{ red}) = \binom{5}{5}\left(\frac{2}{7}\right)^5 = \frac{1 \times 32}{16807}$

adding all

$P(\text{at least 3 red}) = \frac{2000 + 400 + 32}{16807} = \frac{2432}{16807}$

$= 0.1448$