Probability

① 3(blue) + 4(red) + 6(green) + 2(yellow)

= 15 marbles

3(blue) + 4(red) + 2(yell) = 9 marbles

$15C_2 = \frac{15!}{2!(15-2)!} = \frac{15 \times 14 \times 13!}{2! \times (13!)}$

$= 105$

$9C_2 = \frac{9!}{2!(9-2)!} = \frac{9 \times 8 \times 7!}{2!(7!)} = \frac{72}{2} = 36$

$\frac{36}{105} = \frac{12}{35}$ //

one green $= 1 - \frac{12}{35}$

$\frac{35-12}{35} = \frac{23}{35}$

(2) $15C_2 = \frac{15}{2!(15-2!)}$ = 105

No of yellow & blue = 5

$5C_2 = \frac{5!}{2!(5-2)!} = \frac{5 \times 4}{2 \times 1} = \frac{20}{2}$ (10)

$\frac{10}{105}\ ^{2} = \frac{2}{21}$

21

(3) $15C_4 = \frac{15!}{4!15(15-4)!} = \frac{15 \times 13 \times 12 \times 14}{4! \times 11!}$

$= \underline{1365}$

15×14

210×12

420

210×

2520×

1365

4+6+2 = 12

$12C_4 = \frac{12!}{4!(12-4)!} = \frac{12!}{4!(8!}$

$= \frac{12 \times 11 \times 10 \times 9 \times 8}{4! \times 8!} =$

498

$\frac{498}{1365} = \frac{33}{91}$ //

(4) $10! = 10 \times 10 = 100$

2 books - pairs

(91)

(5) 53 Sunday & 52 mond

366 days

$\frac{366}{7}$ → 52 week & 2 extra days.

SN, NT, TW, WT, TF, FS, S

7 weeks

$\frac{1}{7}$

(6) $20C_2 = \frac{20 \times 19 \times 18}{2! \times 18} = \frac{20 \times 19}{2} = \frac{380}{2} = 190$

$10 \cdot C_1 = 10$

$10C_1 = 10$ $\quad 10 \times 10$

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

(7) $15C_3 = \frac{15!}{3!(15-3)!} = 455$

(3) 1 yellow & 2 red

$15C_3 = 455 = 1$