Sec 3.4

#15) 11 letters → 4 S, 4 I, 2 P

$$\frac{11!}{4!\,4!\,2!} = 34,650$$

#17) Important — 12 B, 10 G; 6 Selected

a) 3 B and 3 G

$C(12,3) \cdot C(10,3) = 26,400$

→ b) At least 1 B

= 1 B or 2 B or 3B or .....

= All Possible − (0B + 6G)

= $C(22,6) - C(10,6) = 74,403$

c) 6 Selected in General + 2 Arranged

$C(22,6) \cdot P(6,2)$

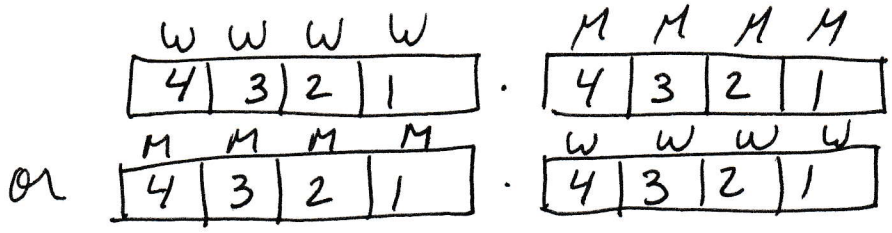
$= 2,238,390$

#21) 8 People in a Circular

$\Longrightarrow (8-1)! = 5040$

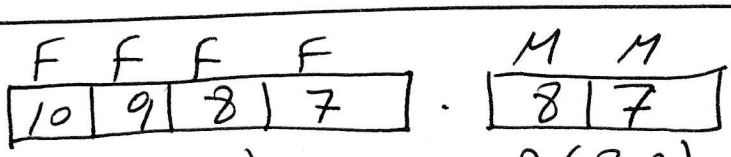
Sec 3.4

#23)



$= 2 \cdot P(4,4) \cdot P(4,4)$

#25)



$P(10,4) \cdot P(8,2)$

$= 282,240$

#27) Handshake Between 2

Select a team of 2

$= C(15,2) = 105$

#29) Select 3 Cones out of 31

= 1 Toppings out of 4

= 2 Cones = = 2

$C(31,3) \cdot C(4,1) \cdot C(2,1)$

$= 35,960$