41]

$5 \cdot 4 \cdot 3 \cdot 2 \cdot 1$

$n(E) = n(\text{correct}) = 1$

There is only one correct order

$n(S) = 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1 = 120$

$P(E) = \dfrac{n(E)}{n(S)} = \dfrac{1}{120}$

93] 6 F and 5 M for 5 positions

A) $P(3F2M) = \dfrac{n(3F2M)}{n(S)}$ $n(S)$

- order does not matter, ie. combination

$n(S) = {}_{11}C_5$ 11 people for 5 position

$= 462$

$n(3F2M) = {}_6C_3 \cdot {}_5C_2 = 20 \cdot 10 = 200$

6F for 3 positions • 5M for 2 positions

$P(3F2M) = \dfrac{200}{462} = 0.4329$

93] cont.

B] $4F\,1M$ $\qquad n(S) = 462$

$$n(4F\,1M) = {}_6C_4\,{}_5C_1 = 15 \cdot 5 = 75$$

$$P(4F\,1M) = \frac{75}{462} = 0.1623$$

C) $5F$ $\qquad n(S) = 462$

$$n(5F) = {}_6C_5 = 6$$

$$P(5F) = \frac{6}{462} = 0.0130$$

D) At least $4F$ means $4F\,1M$ or $5F$

$$P(F \geq 4) = P(4F\,1M) + P(5F)$$

$$= .1623 + .0130$$

$$= 0.1753$$