

Subject: ()

$9! = 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 362880$ (1)

$(9-1)! = 8! = 40320$ (2)

$\frac{(9-1)!}{2} = \frac{8!}{2} = \frac{40320}{2} = 20160$ (3)

$\binom{9}{2} \times 2! = \binom{9}{2} \times 2! = \frac{9 \times 8}{2 \times 1} \times 2 = 36 \times 2 = 72$ (4)

$\binom{9}{3} \times 3! = \binom{9}{3} \times 3! = \frac{9 \times 8 \times 7}{3 \times 2 \times 1} \times 6 = 84 \times 6 = 504$ (5)

$\binom{9}{4} \times 4! = 126 \times 24 = 3024$ (6)

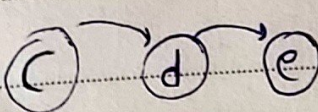
$\binom{9}{5} \times 5! = \frac{9 \times 8 \times 7 \times 6 \times 5}{5 \times 4 \times 3 \times 2 \times 1} \times 120 = 63 \times 120 = 7560$ (7)

(a) (b) (c d) (e) (f) $\rightarrow 8! = 40320$ (8)

(a) (b) (c d) (e) (f) $\rightarrow 8! \times 2! = 80640$ (9)

$\frac{9!}{2!} = \frac{362880}{2} = 181440$ (10)

(a) (b) (c d e) (f) $= 8! \times 3! = 17280$ (11)

 $\rightarrow \frac{9!}{3!} = 120960$ (12)

$(c) \rightarrow (d) \rightarrow (a) \rightarrow \frac{4!}{2!} = 120$

13

$(c) \rightarrow (e) \quad (d) \rightarrow (a) \quad \frac{4!}{2! \times 2!} = 180$

14

$00 \quad (\bullet \bullet \bullet \bullet \bullet) \quad 0000 \quad 4! \times 5! = 14400$

15

$(00000) \quad (\bullet \bullet \bullet \bullet \bullet) \quad - \quad 2! \times 5! \times 5! = 211200$

16

$\bullet \bullet \bullet \bullet \bullet$
 $10101010101 \quad 5! \times \binom{4}{2} \times 5! = 14400$

17

$101 - 4! \times 5! - 5! \times \binom{4}{2} \times 5! = 345600$

18

$2 \times 5! \times 5! = 211200$

19

$5! \times 5! = 211200$

20