



7. ! = Factorial ex) 3! = 3 • 2 • 1 ex) 5!= 5 • 4 • 3 • 2 • 1 ex) ${}_{6}C_{2} = \underbrace{6!}{(8-3)!}$ ex) ${}_{6}C_{2} = \underbrace{6!}{(8-3)!}$ ex) ${}_{8}P_{3} = \frac{8!}{(8-3)!} \underbrace{8 \cdot 7 \cdot 6 \cdot 9 \cdot 9 \cdot 2 \cdot 4}_{(8-3)!}$ ex) ${}_{8}P_{3} = \frac{8!}{(8-3)!} \underbrace{8 \cdot 7 \cdot 6 \cdot 9 \cdot 9 \cdot 2 \cdot 4}_{(8-3)!}$ (33b) ex) ${}_{7}(4,1) = \underbrace{4!}_{(4-1)!}$ ex) ${}_{7}(5,2)$ $\underbrace{5!}_{(5-2)!2!} \underbrace{8 \cdot 7 \cdot 2 \cdot 4}_{(5-2)!2!} \underbrace{9 \cdot 4 \cdot 3 \cdot 2 \cdot 4}_{(5-2)!2!}$ ex) There are 10 finalists in a figure skating competition. How many ways can gold, silver, and bronze medals be awarded? ${}_{10}P_{3} = \underbrace{10 \cdot 9 \cdot 4 \cdot 1 \cdot 4 \cdot 5 \cdot 4 \cdot 7 \cdot 2 \cdot 4}_{7 \cdot 6 \cdot 5 \cdot 4 \cdot 7 \cdot 2 \cdot 4} = [0 \cdot 9 \cdot 8 = \boxed{720}$ ex) Five cousins at at family reunion decide that three of them will go to pick up pizza. How many ways can they choose three people who will go? ${}_{5}C_{3} = \underbrace{5!}_{(5-2)!3!} = \underbrace{\frac{5!}{2!3!} = \underbrace{5! \cdot 4 \cdot 5 \cdot 4 \cdot 7 \cdot 4 \cdot 4}_{7 \cdot 1 \cdot 7 \cdot 1 \cdot 4} = \begin{bmatrix}0 \cdot 9 \cdot 8 = \boxed{720}$





barley penal 61=6.5.4.3.2.1 61=770 720 circus port

ex) Find the number of possibilities for choosing two CDs to buy from ten that are on sale.

ex) Find the number of possibilities for seating 5 men and 5 women alternately in a row, beginning with a woman.

***ex) Six cards are drawn from a standard deck of cards. How many hands consist of two hearts and four spades?

***ex) Five cards are drawn from a standard deck of cards. How many hands consist of three clubs and two diamonds?

Assignment: page 693 #2- 34 even