

12-3-19 1st Try

- ① How many different ways can I deal 2 cards when playing "Two Toe" tonight at Poker Club?

$$52 \text{ nCr } 2 = 1326$$

- ② How many ways can I place 5 people in order from favorite student to least favorite?

$$\frac{5}{\text{Fav.}} \cdot \frac{4}{2^{\text{nd}}} \cdot \frac{3}{3^{\text{rd}}} \cdot \frac{2}{4^{\text{th}}} \cdot \frac{1}{\text{Least}} = 120$$

- ③ From my 10 girls, I must pick a starting 5. How many options exist?

$$10 \text{ nCr } 5 = 252$$

- ④ My passcode is 3 letters (upper or lower case) and then 2 digits. How many possibilities exist? (e.g. AAy22)

$$\frac{52}{L} \cdot \frac{52}{L} \cdot \frac{52}{L} \cdot \frac{10}{D} \cdot \frac{10}{D} = 14,060,800$$

12-3-19 3rd Trig

- ① My passcode is 3 letters (upper or lower case - no repeats) and then 2 different digits. How many possibilities exist?

$$\frac{52}{L} \cdot \frac{51}{L} \cdot \frac{50}{L} \cdot \frac{10}{D} \cdot \frac{9}{D} = 11,934,000$$

- ② At Poker Club tonight, I will play "Two Toe." How many different 2 card hands can be dealt?

$$52 nCr 2 = 1,326$$

- ③ From the 10 girls who will play tonight, how many options does Coach Cunner have to pick a starting 5?

order doesn't matter.

$$10 nCr 5 = 252$$

12-3-19 4th Trig

- ① My passcode is 4 letters (lower or upper case - no 2 the same) and then a digit.
How many options exist?

$$\frac{52}{1^{\text{st}}L} \cdot \frac{51}{2^{\text{nd}}L} \cdot \frac{50}{3^{\text{rd}}L} \cdot \frac{49}{4^{\text{th}}L} \cdot \frac{10}{\text{Digit}}$$

$$64,974,000$$

- ② From you 19, I will pick 3 to go to China with me.
How many options exist?

Order does not matter.

$$19 nCr 3 = 969$$

- ③ At Poker Club tonight, I will play "Two Tee". Only 2 cards are dealt to each of the 7 players. How many possibilities exist?

$$52 nCr 2 = 1,326$$

AA
AA
AA

- ④ From the 12 toppings, we will pick a pizza with 4 or fewer toppings. How many different pizzas can be made?

$$\begin{array}{c} \frac{4 \text{ toppings}}{12 nCr 4} \\ 495 \end{array} + \begin{array}{c} \frac{3 \text{ top}}{12 nCr 3} \\ 220 \end{array} + \begin{array}{c} \frac{2}{12 nCr 2} \\ 66 \end{array} + \begin{array}{c} \frac{1}{12} \\ 12 \end{array} + \begin{array}{c} \frac{0}{1} \\ 1 \end{array}$$

$$794$$

⑤ From the 10 girls on Coach Conner's team, he will pick a starting 5. How many options exist?

$${}_{10}C_5 = 252$$

⑥ From you 19, I will put you in a seating chart tomorrow. If there are only 19 desks, how many options are there?

$$\frac{19}{1^{\text{st}} \text{ Desk}} \frac{18}{2^{\text{nd}}} \frac{17}{3^{\text{rd}}} \dots \cdot 2 \cdot 1 = 19!$$

$$1.216451004 \text{E} 17$$

$$\times 10^{17}$$

$$12,164,510,040,000,000$$