

11-8-17 1<sup>st</sup> Trig

HW #11

$$\underline{67} \cdot \underline{67} \cdot \underline{67} \cdot \underline{67} =$$

$$10 + 26 + 26 + 5$$

- ① Of 30 kids, we must pick a President and V.P.  
How many options are there?

$$\frac{30}{\text{Pres.}} \frac{29}{\text{V.P.}} = 870$$

- ② Passcode must be digit, then letter (upper or lower case) and then another digit (e.g. 2B3, 4g5, etc.)

$$\frac{10}{D} \frac{52}{L} \frac{10}{D} = 5200$$

③ From my 12 kids, I will take 3 to the movies. How many options exist?

$${}_{12}C_3 = 220$$

ACB  
ABC

BAC  
BAC

CBA  
CAB

~~$$12 \cdot 11 \cdot 10$$~~

④ I have 6 girls and 5 boys in class I must pick 3 girls and then 1 boy. How many options exist?

Girls

6 ncr 3

20

○

○

○

○

x

Boys

5

↓

Tom - 20

Aick - 20

Dave - 20

Bob - 20

Cecil - 20

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100

11-8-17 3<sup>rd</sup> Trig

- ① From 20 kids, I must pick 3 to go get food for me. How many options exist?

$$20 nCr 3 = 1,140$$

ABC  
BAC  
CAB  
CBA

- ② My passcode can be lowercase or uppercase letter followed by 3 digits and then an uppercase letter. How many options exist?

$$\begin{array}{l} 26 \\ 26 \end{array} \rightarrow \frac{52}{L} \cdot \frac{10}{D} \cdot \frac{10}{D} \cdot \frac{10}{D} \cdot \frac{26}{Upp-L}$$
$$1,352,000$$

- ③ Passcode is 3 characters long. You can't repeat any thing used. You can use lowercase letters, digits, or any of 7 symbols. How many passcodes exist?

$$\begin{array}{r} 26 \\ 10 \\ 7 \\ \hline 43 \end{array}$$


$$\underline{43} \cdot \underline{42} \cdot \underline{41} = 74,046$$

- ④ From my 8 kids, I will take 2 to the movies. How many options exist?

$$8nC2 = 28$$

- ⑤ I own 142 ties. I will give 20 away to Goodwill. How many ways could I pick the 20?

$$142nC20$$

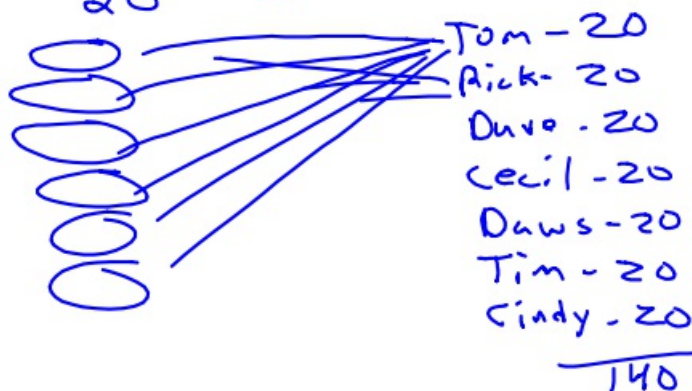
$$1.121899051E24$$


- ⑥ From 6 girls and 7 boys, I will pick 3 girls and 1 boy to play on my team. How many options exist?

Girls  
 $6nC3$   
 20

x

Boys  
 $7 = 140$



11-8-17 4<sup>th</sup> Trig

- ① From the 22 kids, we must pick a President and V.P. How many options exist?

$$\frac{22}{P} \cdot \frac{21}{V.P.} = 462$$

- ② From the 22 people in my class I will give 2 people \$50. How many ways exist to do that?

AB BA

$${}_{22}P_2 = 231$$

- ③ My passcode is 3 characters long. First is a letter upper case or lowercase, second is an odd digit, and third is just an upper case letter. How many passcodes exist?

$$\frac{52}{\text{Upper Lower}} \cdot \frac{5}{\text{odd digit}} \cdot \frac{26}{\text{Upper Letter}} = 6760$$

④ From my 5 kids, I will take 3 to the movie. How many options exist?

$$5nC3 = 10$$

⑤ From 8 girls and 5 boys, I will pick 3 girls and 1 boy to play on my basketball team. How many options exist?

