12-2-19 1st Trig

① I have kids A, B, C, and D. I must pick two of them to go to the park. How many options are there? List them out.

AB ~~BA~~ ~~CA~~ ~~DA~~
AC ~~BC~~ ~~CB~~ ~~DB~~
AD ~~BD~~ ~~CD~~ ~~DC~~

Order doesn't matter

4 nCr 2 = 6

② From Sal's 12 toppings, I must pick 3. How many options are there?

order doesn't matter

12 nCr 3 = 220

③ Powerball. Pick 5 numbers from 1-69. Then you pick one number from 1-26.

69 nCr 5 = 11,238,513

11,238,513 × 26

292,201,338

④ How many different 5 card hands can be dealt to you?

52 nCr 5 = 2,598,960

⑤ What are the chances I am dealt a Royal Flush?

$\frac{4}{2,598,960}$

⑥ From my 20 shirts, I must take 4 to pack in my bag for my trip. How many possibilities exist?

$20 \text{ nCr } 4 = 4{,}845$

⑦ At Sal's they have 12 toppings. They have any 2 toppings or less on sale for $9.99. How many options are there?

2 toppings	1 toppings	0 toppings
12 nCr 2	12	1
66	(12 nCr 1)	

+ +

79

12-2-19 3rd Trig

(1) I have kids A, B, C, & D. List out all the possible ways I can take 2 of them to the store.

AB ~~BA~~ ~~CA~~ ~~DA~~
AC BC ~~CB~~ ~~DB~~
AD BD CD ~~DC~~

Does order matter

4 nCr 2

(2) At Sal's there are 12 toppings. How many 5 topping pizzas can we make?

12 nCr 5 = 792

(3) How many different 5 card hands can be dealt to me?

52 nCr 5 = 2,598,960

(4) What are the odds I will be dealt a Royal Flush?

$$\frac{4}{2,598,960} = \frac{1}{649,740}$$

(5) Powerball has you pick five #s from 1-69 and then you must pick a Powerball from 1 to 26.

$$69 \text{ nCr } 5 = 11{,}238{,}513$$

$$11{,}238{,}513 \times 26$$

$$292{,}201{,}338$$

(6) From my 11 players, how many different starting 5 can I make?

$$11 \text{ nCr } 5 = 462$$

12-2-19 4th Trig

① I have 4 kids who are named A, B, C, & D. I will take 2 of them to the store. List all possible ways I can do that.

AB ~~BA~~ ~~CA~~ ~~DA~~
AC ~~BC~~ ~~CB~~ ~~DB~~
AD ~~BD~~ ~~CD~~ ~~DC~~

Order doesn't matter

4 nCr 2 = 6

② At Sal's they have 22 toppings to pick from. How many 2 topping pizzas can be made?

22 nCr 2 = 231

③ Powerball has you pick 5 #s from 1 to 69. Then you must pick a Powerball from 1 to 26. How many possibilities are there?

69 ncr 5 = 11,238,513

X 26

292,201,338

(4) How many different 5 card hands can be dealt?

$52 \text{ nCr } 5 = 2,598,960$

(5) What are the chances you will be dealt a Royal Flush?

$$\frac{4}{2,598,460} = \frac{1}{649,740}$$