

11-20-13  
3<sup>rd</sup> Tr:y

Megamillions

Pick 5 numbers from 1-75.

How many ways to do this from the start?

$$75 \text{ ncr } 5 = 17,259,390$$

Now you must pick a mega ball which is from 1-15.

Thus your odds of winning are

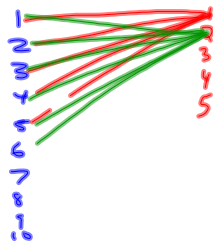
$$\frac{1}{17,259,390 \times 15}$$

$$\frac{1}{258,890,850}$$

- ② From the 5 girls, I will pick 2, and from the 6 boys, I will pick 3. How many different sets of girls with boys can I pick?

$$\begin{array}{l} \text{Girls} \\ 5 \text{ ncr } 2 \\ 10 \end{array} \times \begin{array}{l} \text{Boys} \\ 6 \text{ ncr } 3 \\ 20 \end{array}$$

200 different sets



- ③ Little Caesar's has 8 toppings. They offer a 2 topping pizza for \$5.99. How many pizzas can I make if the pizzas have 2 toppings or less?

$$\begin{array}{l} \text{2 toppings} \\ 8 \text{ ncr } 2 \\ 28 \end{array} \quad \begin{array}{l} \text{1 topping} \\ \cancel{8 \text{ ncr } 1} \\ 8 \end{array} \quad \begin{array}{l} \text{0 topping} \\ \cancel{8 \text{ ncr } 0} \\ 1 \end{array}$$

37 total pizzas

④ From a 52 card deck,  
how many ways can I be  
dealt a royal flush?

10 J Q K A  
all of the same suit

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

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

11-20-13  
4<sup>th</sup> Trig

Megamillions

Pick 5 numbers from 1-75.

How many sets of 5 numbers exist?

$$75 nCr 5 = 17,259,390$$

Now they make you pick one megaball from 1-15.

Thus, what are your odds of winning?

$$\frac{1}{17,259,390 \times 15}$$

$$\frac{1}{258,890,850}$$

In my class, there are 5 girls and 9 boys. If I pick 2 girls and 3 boys to represent my class in the cheer competition, how many groups can I form?

$$\frac{\text{Girls}}{5 nCr 2}$$
$$10$$

$$\frac{\text{Boys}}{9 nCr 3}$$
$$84$$

840 groups

Sal's offers a 2 topping pizza on sale for \$6.99 on Mondays. How many different pizzas could you order if there are 12 toppings to pick from and you don't have to get both toppings?

<u>2 toppings</u>	<u>1 topping</u>	<u>0 toppings</u>
<del>12 ncr 2</del>	<del>12 ncr 1</del>	<del>12 ncr 0</del>
66	12	1
	79	

What is the probability I would be dealt a royal flush?

Royal flush is a 10, J, Q, K, A  
all of the same suite.

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

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