

Which to use?  
Fundamental Principle of counting?  
Combinations formula?  
Permutations formula?

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We can use the *Permutations formula* to find  ${}_{15}P_6$  or  **$P(15,6)$**  or the *Fundamental Principle of Counting*.

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Solution:

3) Using the *Permutations formula* to find  ${}_{15}P_6$  or  $P(15,6)$  :

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$$= 15 \cdot 14 \cdot 13 \cdot 12 \cdot 11 \cdot 10 = 3,603,600 \text{ lineups}$$

Also, you can check the result using online calculator....

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Solution:

4) using the *Fundamental Principle of Counting*:



1<sup>st</sup>    2<sup>nd</sup>    3<sup>rd</sup>    4<sup>th</sup>    5<sup>th</sup>    6<sup>th</sup>    *positions*

We will be choosing one person from a team for each position, starting from the 1<sup>st</sup> position.

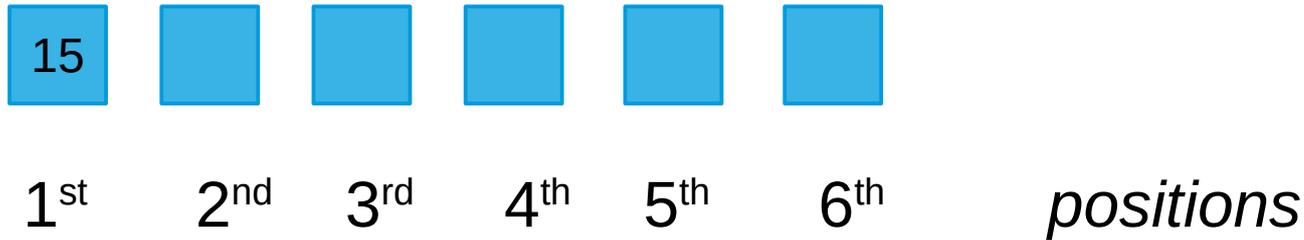
Since we are “removing” players from the pool, every time the number of choices will be decreasing by 1.

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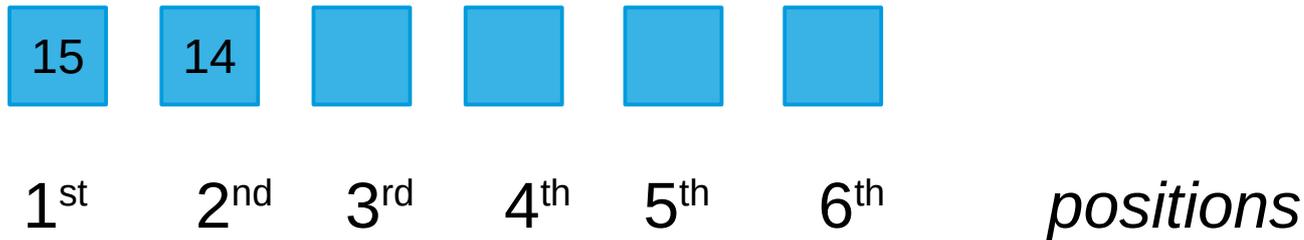
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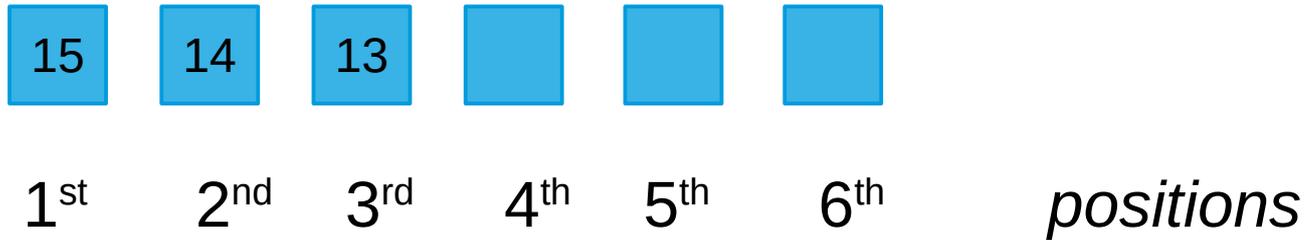
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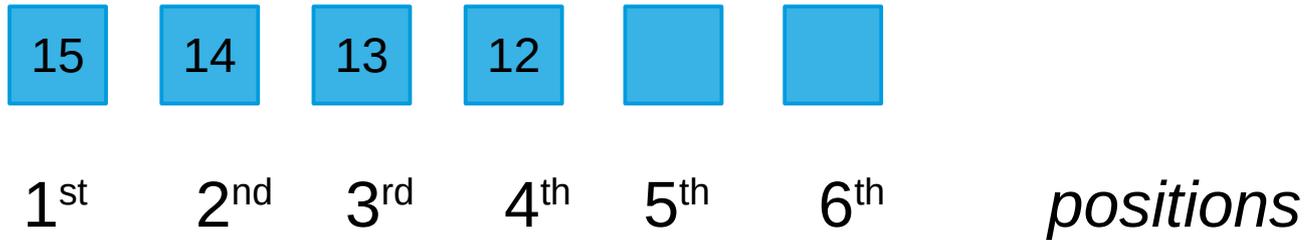
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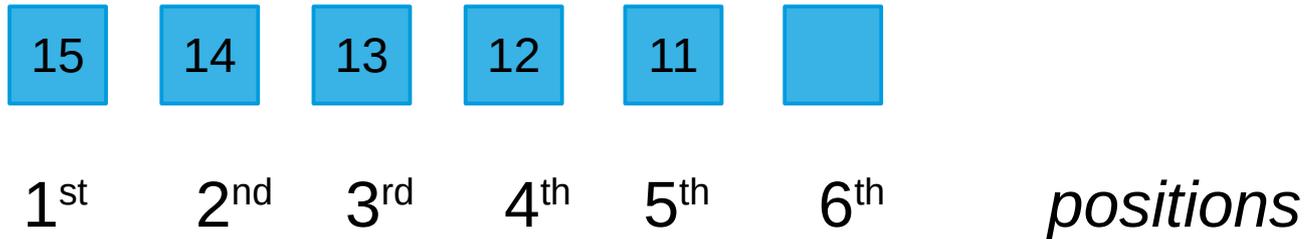
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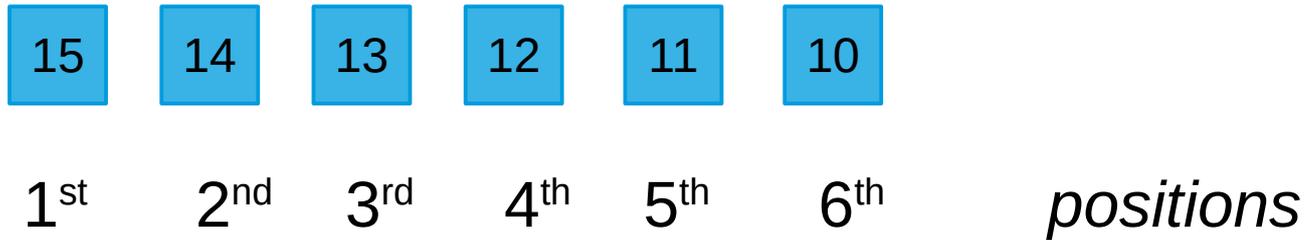
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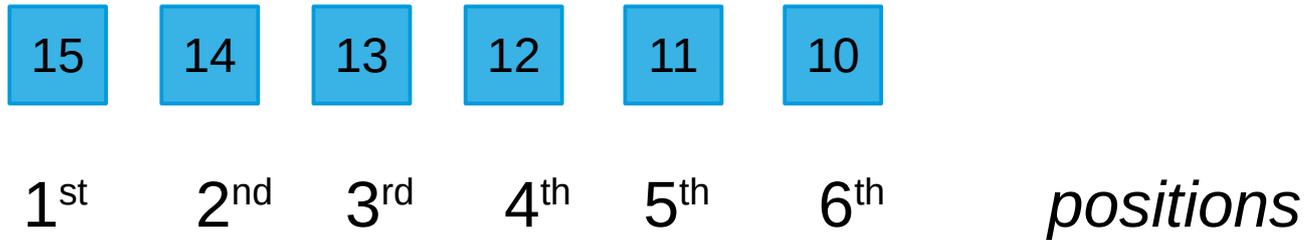
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Next, multiply all the choices!

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