Consider expansion of $(x+y)^n$:

$$(x+y)^n = \sum_{i=0}^{n} \binom{n}{i} x^i y^{n-i}$$

We need to find coefficient at term x^3y^3.

We see that all terms of the expansion are in form $x^k y^{n-k}$. So if $n \neq 6$ coefficient at x^3y^3 equals to 0.

If $n = 6$ the coefficient at x^3y^3 equals to

$$\binom{6}{3} = \frac{6 \cdot 5 \cdot 4}{3!} = 20$$

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