If we have N players, how many coalitions are there?
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Let's examine 2 players named A and B. I'll write my coalitions with braces (curly brackets) to make seeing them easier. And it happens to be proper mathematical form as well.

There's a coalition with both of them. Then two coalitions with one person. Also we'll throw in the coalition with nobody, the empty coalition.

2 players { },{A},{B},{AB}.

Now for 3 players we could organize it by thinking of how many people are in the coalition. So write out the zero player coalition, all 3 one player coalitions, the two player coalitions, and the three player coalition. But there's a sneaky way of doing it.

3 players--A, B, and C. Can I list off all the coalitions that don't have C? Yep, did it above. So I'll copy and paste.

{ },{A},{B},{AB}. All the remaining coalitions have C as a member. And we can copy and paste again, and just add C.

{ },{A},{B},{AB} and then { C},{AC},{BC},{ABC}.

I can use this same trick again for 4 players.

{ },{A},{B},{AB},{C},{AC},{BC},{ABC} from above and {D},{AD},{BD},{ABD},{CD},{ACD},{BCD},{ABCD}.

Each player added doubles the number of coalitions.

Number of Players	Number of coalitions	
0	1.	Yeah, if you have 0 players there is one coalition, the empty coalition!
1	2	{ },{A}
2	4	{ },{A},{B},{AB}
3	8	{ },{A},{B},{AB},{C},{AC},{BC},{ABC}

And so on. We can write this a better way.

Number of Players	Number of coalitions
0	$1 = 2^0$
1	$2 = 2^1$
2	$4 = 2^2$
3	$8 = 2^3$
4	$16 = 2^4$
5	$32 = 2^5$
Skip to a general number. . .	
N	2^N

So, to answer the question, if you have N players there are 2^N coalitions if you count the empty coalition or 2^N - 1 if you don't.
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