

Hint for Problem 28

The problem is asking you to describe a one-to-one function from the set of binary representations of numbers between 0 and $2^n - 1$ onto the set of subsets of the set $[n]$. Write down these two sets for $n = 2$. They should both have four elements. The set of binary representations should contain the string 00. You could think of this as the instruction "take no ones and take no twos." In that context, what could you think of the string 11 as standing for? This should help you describe a function. Of course now you have to figure out how to show it is one-to-one and onto.