

Sir Bedevir will only enter in a tournament if he is certain that he will win with a probability of at least $1/2$. In any combat of two knights, the probability of the victory of the parties are proportional to their fighting potentials. Bedevir's fighting potential is 1, and that of his n th opponent is $\frac{1}{2^{n+1} - 1}$. How many knights may have entered in the tournament if Bedevir, having carried out some careful calculations, also decided to enter?