1995 Paper 2 Question 23

Probability

Two gamblers play a game which involves tossing a fair coin. After t_2 tosses the first gambler has scored k wins. If there is no record of the sequence of tosses, what probability distribution describes the situation after t_1 tosses ($t_1 < t_2$)?

If the game is tied after eight tosses, show that the probability that it was tied after four is $\frac{18}{35}$.

[20 marks]