Because the expected value of the number of coin tosses before receiving a head is 2, we expect that after each round, half of the people will leave. Meaning that $E[X_r] = n/2/2/2/2/... \rightarrow n/2^r$

Another way of writing this would be to consider this as the sum of indicator variables

Assume that for one person, their chance of leaving is ½. For a given round r, let x_i be the variable that shows whether that person will leave. We see that Pr[$x_i = 1$] (heads) = $1/2^r$, and tails is $1 - 1/2^r$.

Therefore, $E[x_i] = 0 * (1 - 1/2^r) + 1 * (1/2^r) = 1/2^r$

Because we have n people, define $E[X_r] = E[x_1 + x_2 + ...] = n/2^r$

Additionally, $E[{X_r}^2] = \sum_{i=1}^{n} E[{x_i}^2] + \sum_{i \neq j}^{n} E[x_i\, x_j]$