Algorithm: Given an instance of this problem with n variables and m clauses, we set each variable randomly as 0 or 1, so the probability of each variable being 0 or 1 will be 0.5.

Proof: Assuming a clause has t variables, for each clause, the P of unsatisfied will be $(1/2)^t$, so the P of satisfied will be $(1-(1/2)^t)$. assuming we have total m clauses, the optimial solution C* must be smaller than m, so C*<=m. on average, the satisfied clause will be $(1-(1/2)^t)$*m, which is definitely greater than 0.5m. so C' >=0.5m

The approximation ratio is C*/C'<=m/0.5m=2, so this is 2-approximation method