1(a) Question 4.6 of CLRS. (b) What is wrong with the following:

I have two envelopes. I put \$50 in one and \$100 in the other. I allow you to choose one envelope and keep the money inside. You are thinking about taking one of the envelopes. You reason as follows: Let x be the amount of money in the envelope. The other envelope contains $2x$ dollars half the time and $\frac{x}{2}$ dollars half the time. Thus, on average it contains $\frac{2x+x/2}{2}$ which is $\frac{5x}{4}$ dollars. So you expect to win more if you take the other envelope.