Trading envelopes

(a) I give you an envelope containing a certain amount of money, and you open it. I then put into a second envelope either twice this amount or half this amount, with a fifty-fifty chance of each. You are given the opportunity to trade envelopes. Should you?

(b) I put two sealed envelopes on a table. One contains twice as much money as the other. You pick an envelope and open it. You are then given the opportunity to trade envelopes. Should you?

(c) If your answers to (a) and (b) are the same, explain why. If they are different, explain why.