5) For the cube paradox (see the course web page), show that the space-time interval between A and B hitting the table is space-like and therefore non-causal.

6) A beam of excited Rb atoms (lifetime 27 nsec) moving at 0.9c decays by emitting photons. If a particular atom decays after 60 nsec, a) calculate the spacetime interval for the decay in the Rb frame; b) use the spacetime interval and time-dilation to find the distance the atom moved before decaying; c) check that the answer is the one you expected from our previous work, or use different reasoning to get the same answer.