POW#10 Solution: The cord breaks. This problem is known as Bell’s spaceship paradox. Consider the inertial frame of the spaceships before they begin to accelerate. To an observer in this frame, the ships follow identical worldlines, a distance $L$ apart. The separation between the ships remains $L$. But once the ships are moving, this separation is length contracted. That is, the proper distance between the ships must be larger than $L$, and increasing as the ships continue to accelerate. At some point the proper separation becomes sufficiently large to break the cord.