Two identical spaceships are initially at rest, on the $x$ axis, a distance $L$ apart. The ships are connected by a cord of length $L$. The cord can stretch a little bit, but will break if stretched too much. Simultaneously (in their initial rest frame) the spaceships begin accelerating in the $x$ direction with the same proper acceleration. (That is, the ships’ engines are on the same setting.) What happens to the cord? Does it stay taught? Does it go slack? Does it break?

Check your answers at the undergraduate news blog:

www.physics.ncsu.edu/undergraduate/newsblog.php