CM 7a1198A

Abby is on a space station that is in an inertial frame, and *Bob* is on another space station that is stationary with respect to *Abby*. *Charlotte* is on a rocket ship traveling from *Abby* to *Bob* with a constant speed of $v = \frac{3}{5}c$ relative to *Abby*. *Abby* signals with a flashlight every 10 seconds.

A) At what time interval does *Charlotte*, according to her own clock, receive *Abby's* signals?

B) If *Charlotte* flashes a signal to *Bob* every time she receives a signal from *Abby*, at what time interval does *Bob*, according to his own clock, receive *Charlotte's* signals?

C) *Dan* is on a second, identical rocket ship traveling from *Abby* to *Bob*. In *Abby's* frame, the length of *Dan's* ship is ¾ times the length of *Charlotte's* ship. Find the velocity of *Dan's* ship relative to *Abby*.

D) Find the length of *Dan's* ship relative to *Charlotte's* ship as measured in *Charlotte's* frame.