

75. We use the relative velocity formula (Eq. 38-28) with the primed measurements being those of the scout ship. We note that $v = -0.900c$ since the velocity of the scout ship relative to the cruiser is opposite to that of the cruiser relative to the scout ship.

$$u = \frac{u' + v}{1 + u'v/c^2} = \frac{0.980c - 0.900c}{1 - (0.980)(0.900)} = 0.678c .$$