5. (b) An observer A in the inertial frame S sees a red flash of light at the origin at time $t=0$ and a blue flash of light at $x=x_B$ km and time $t=9.50\,\mu s$. Another observer B is situated at the origin of another inertial frame S' which moves in the direction of increasing x with a speed of v relative to S. The axes of the two inertial frames are parallel at all times and their origins coincide at $t=t'=0$. If $v=0.6c$, what is the range of the values of x_B so that observer B sees the blue flash before seeing the red flash?

[5 marks]