$\frac{15m}{c+v} < \frac{15m}{c-v}$ hence $t_B < t_A$ X

They do agree on the simultaneity of light arriving at Cheryl after reflection from A and B. To see this, notice that $t_{AB} = t_B$ and $t_{BC} = t_A$. Hence the 'round trips' take the same time for reflection from both mirrors. Notice also that from Cheryl's point of view, the train is stationary in her frame of reference, hence light arrives simultaneously at A and B, and simultaneously returns to her. ∴ must be for all observers since the space-time interval is zero. 4/7

d) Yes, they agree. The train is at rest in Cheryl's reference frame, so all the parts of each round trip take the same time. The light is moving in the same direction as the train in Dan's reference frame, and so has to travel the same distance (15m + vt). The speed of light is the same on both parts, as would be expected from a universal constant, hence the times taken to mirror A and from mirror B to Cheryl are the same ($= 15m / c-v$) from Dan's point of view too. What are the values of these times? 4/6

e) In Dan's reference frame, the time taken for the light to travel from Cheryl to mirror A is given by

$t_A = 5.77 \times 10^{-8}$ s should be 5.6×10^{-8} s.

For Cheryl, $t_A' = 5 \times 10^{-8}$ s.

In 5.77×10^{-8} s in Dan's reference frame.