

6. $u_{PA} = u_{PB} + v_{BA} \rightarrow 100 = 150 + v_{BA} \rightarrow 50 \text{ m/s S}$

7. since height is same, they have same v_{y1} , and so t is the same
(same time to rise + to fall)

8. slope at $t = 1.5 \text{ s} = -4.7 \text{ m/s}$

extra credit: $\vec{a} = 6\hat{j} \text{ m/s}^2$