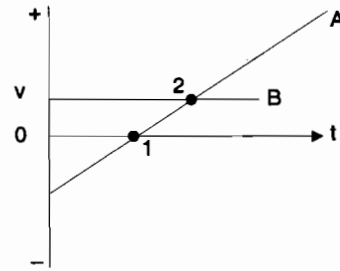
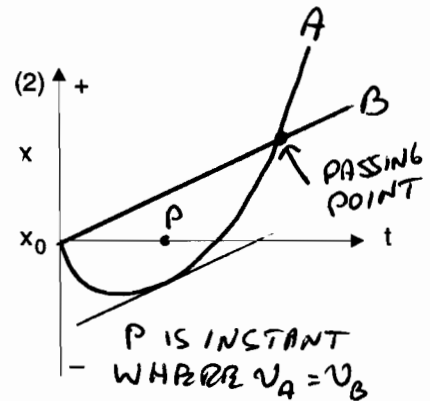
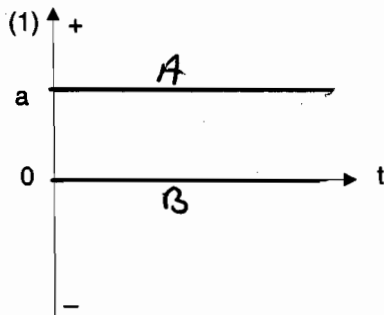


2. Two vehicles, A and B, travel on South Temple according to the graph shown. Time ($t_0 = 0$) corresponds to the initial instant when both vehicles are in the middle of the intersection at 500 East on South Temple. Assume positive velocities are to the east.



- A. Describe the motion of each vehicle.
 B. What are the meanings of the points (1) where line A crosses the horizontal axis and (2) where line A intersects line B.
 C. On the graphs below show (1) the a vs. t "curves" for the motion of each vehicle and (2) the x vs. t "curves" for the motion of each vehicle.



Note: $x_{0A} = x_{0B} = x_0 = 500$ East, South Temple.

- D. Show on graph (2) above, the x vs. t graph the instant at which v_A and v_B .
 E. Do the two vehicles pass each other on South Temple east of 500 East? Show on graph (2) the position where this occurs. Which vehicle is traveling more slowly at this passing location?

A. B TRAVELS WITH CONSTANT POSITIVE VELOCITY EAST ON SOUTH TEMPLE. A IS INITIALLY MOVING WEST ON SOUTH TEMPLE WITH CONSTANT EASTWARD ACCELERATION. A EVENTUALLY STOPS, TURNS AROUND (AT 1) AND PROCEEDS EASTWARD ON SOUTH TEMPLE.

B. (1) INSTANT WHEN A STOPS AND TURNS AROUND TO THE EAST SOMEWHERE WEST OF 500 EAST

(2) INSTANT WHEN $v_A = v_B$

D. SEE GRAPH 2.

E. SEE GRAPH 2. VEHICLE A IS TRAVELING FASTER (STeeper SLOPE).