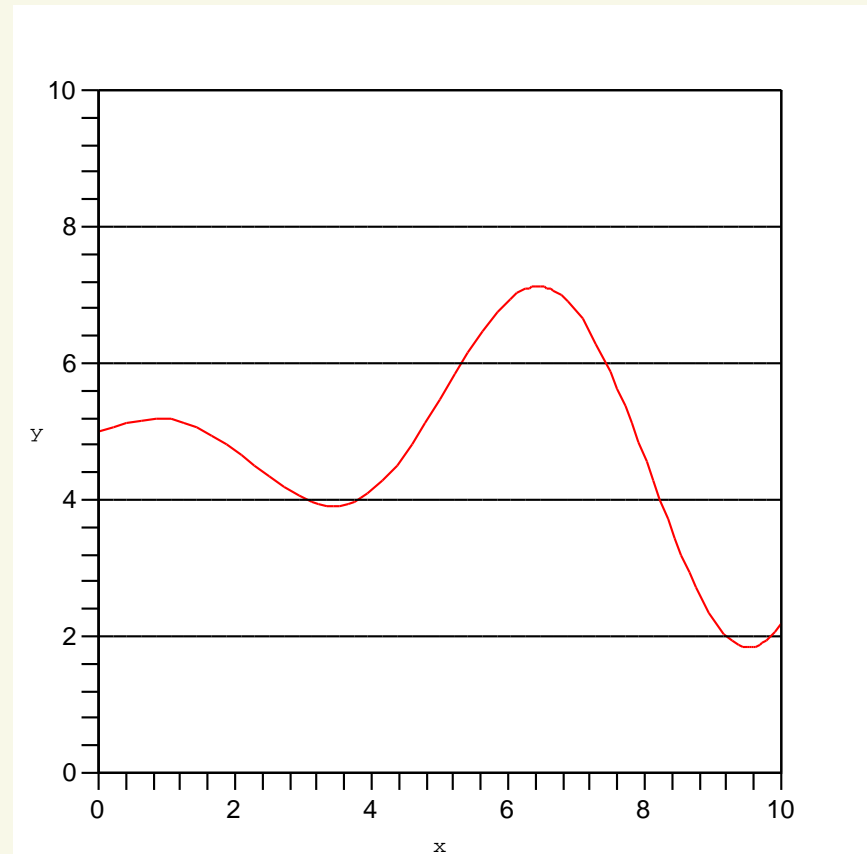


The graph gives the position  $P(t)$  of a highway patrol car on the Mass Pike in miles east of Worcester, where  $t$  is minutes after 12:00 noon. Let  $V(t)$  be the car's velocity at time  $t$ .

1. Where is  $V(t)$  positive? negative? zero?
2. When does the car change directions from driving east to west? from west to east?
3. Use this information to *sketch* a graph  $V(t)$ .
4. Where is the second derivative of  $P$  positive? negative? (Use your graph from 3).
5. Sketch a graph of  $P''$ .



Graph of  $P(t)$