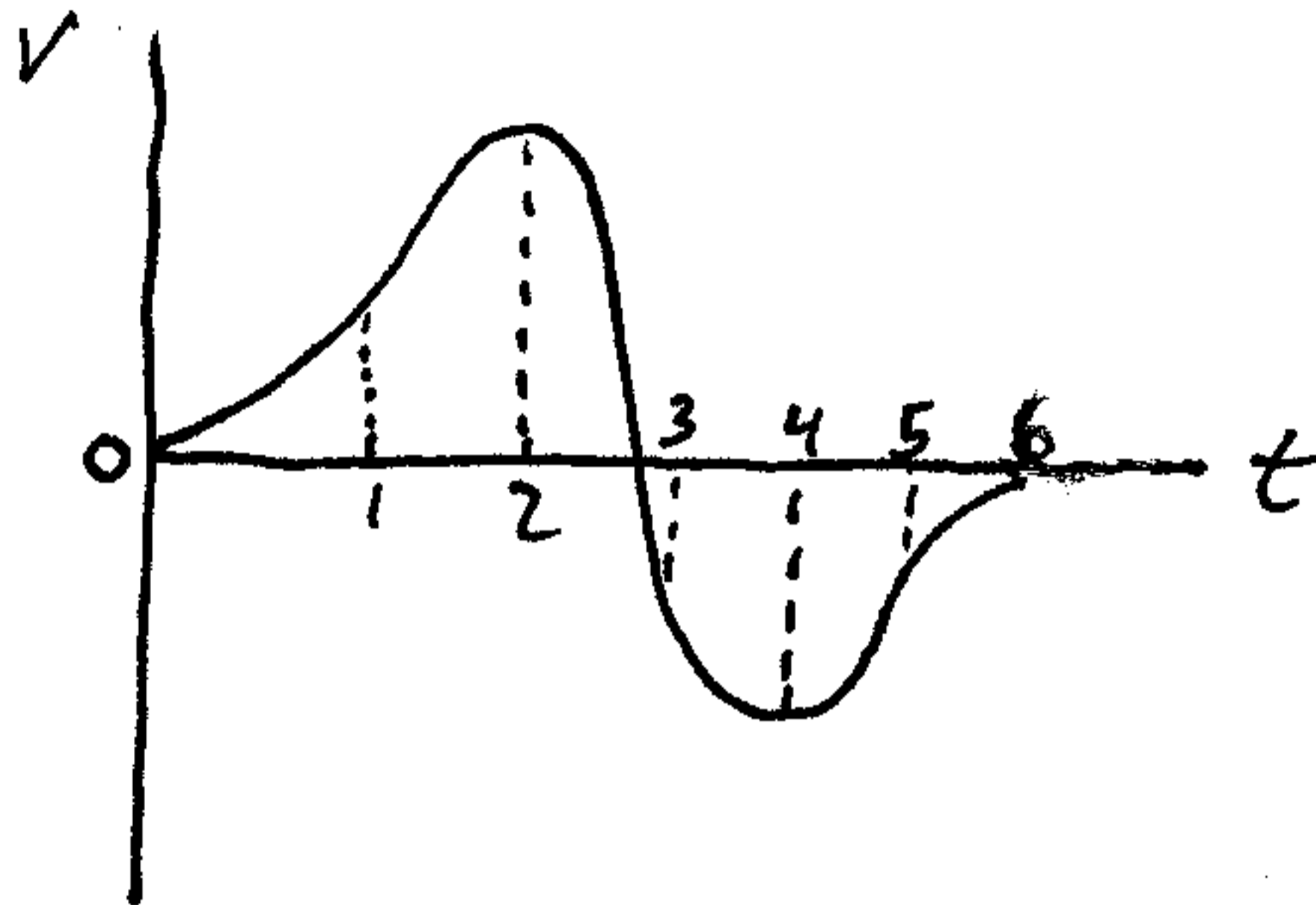
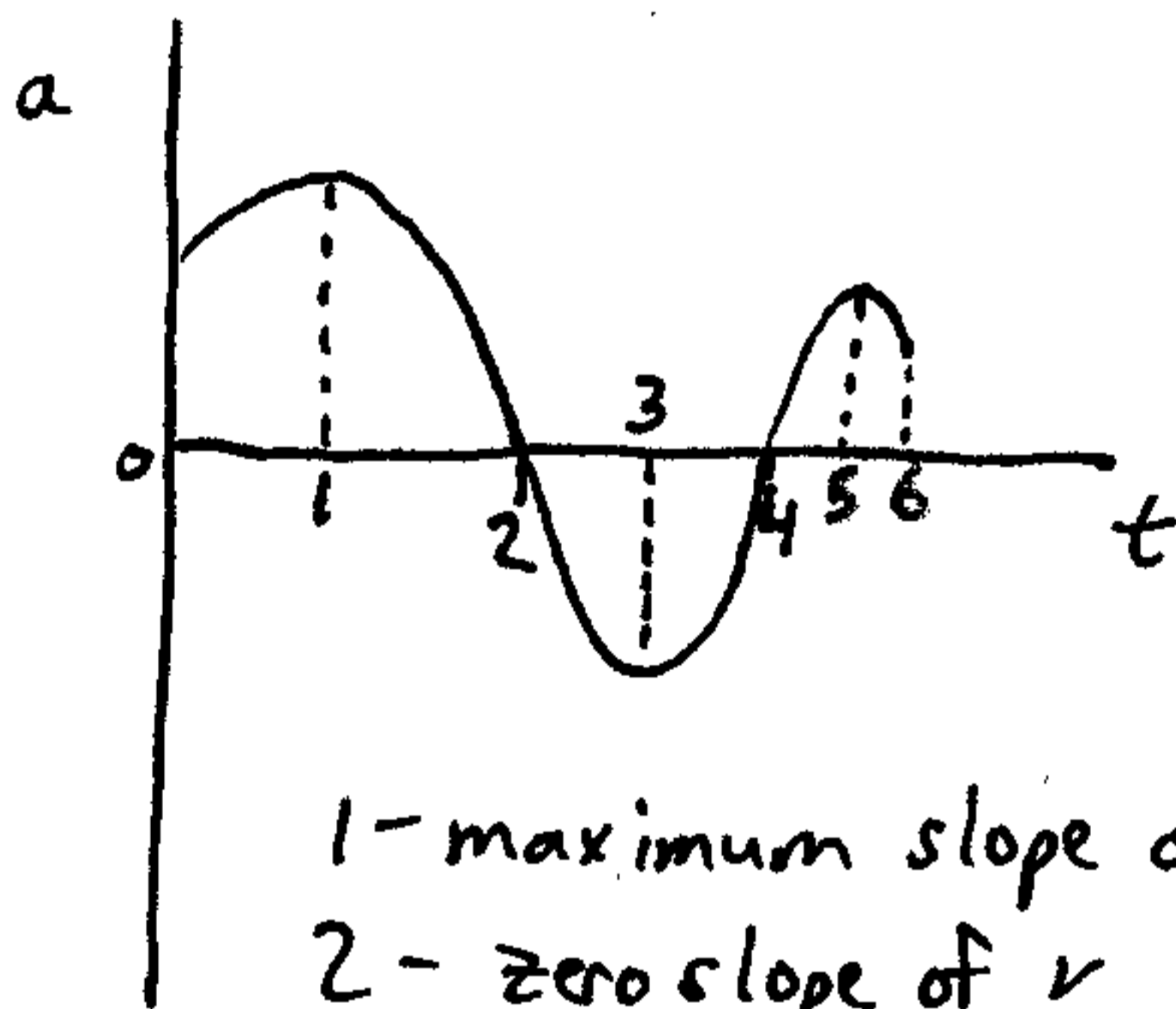


This is a 1-D problem involving instantaneous acceleration.



A particle moves in a straight line, as represented by the above graph of velocity vs. time. Sketch a graph representing the acceleration of this particle.

Solution:



$$a = \frac{dv}{dt}$$

(instantaneous acceleration = instantaneous slope, at time, t , of v)

Look at the slope of $v-t$ graph to see what acceleration, a , is doing.

- 1 - maximum slope of $v \rightarrow$ inflection point on v
- 2 - zero slope of v
- 3 - minimum slope of $v \rightarrow$ inflection point on v
- 4 - zero slope of v
- 5 - maximum slope of $v \rightarrow$ inflection point on v
- 6 - positive slope of v