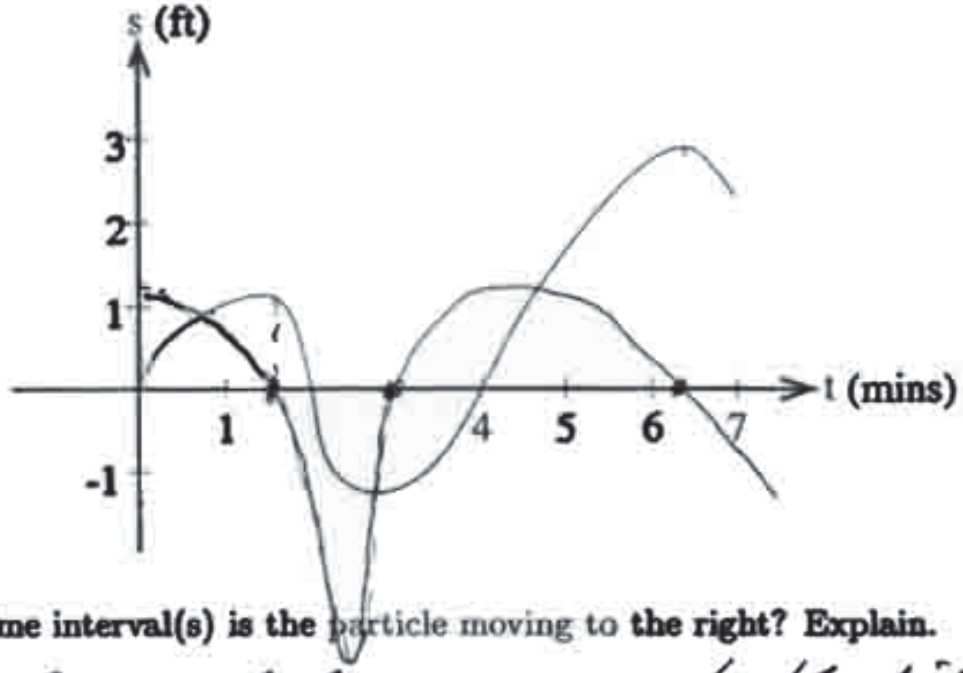
10. (14 pts.) A particle is moving along a straight line. Its distance, s, measured in feet to the right of a fixed point at time t minutes, is given by the graph in the figure.



(a) Over which time interval(s) is the particle moving to the right? Explain.

The particle is moving to the right when 's' is increasing. Thus, approximately for $0 < t < 1.5$ and $3 < t < 6.25$.

(b) Over which time interval(s) does the particle have negative acceleration? Explain.

The particle has negative acceleration when 's' is concave down, or for approximately $0 < t < 2$ and $4 < t < 7$.

(c) At approximately which time does the particle have the highest speed? (Recall that speed is the magnitude of the velocity.) Explain your answer.

The highest speed is indicated by the steepest slope (in either direction). This appears to be around $t = 2$.

(d) On the axes above, sketch a graph of the velocity function.