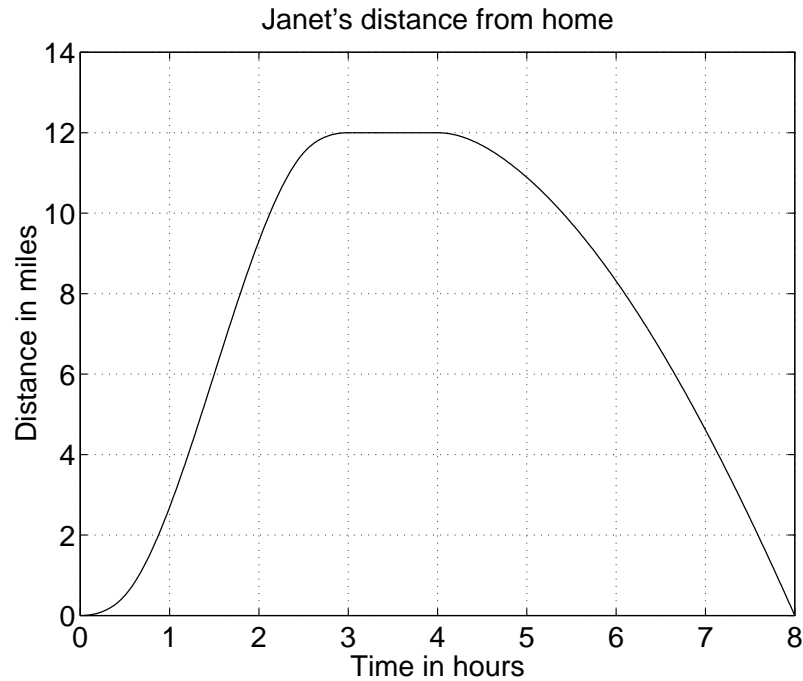


11. (16 points) Janet rides her bicycle on a day trip (8 hours) along a straight north-south road. Her distance $s(t)$ in miles north of her home t hours after her trip begins is given by the following graph.



(a) Which is larger? Janet's average velocity for the first four hours or her instantaneous velocity two hours after the start of the trip? Explain.

(b) Did Janet stop during her trip? Explain.

(c) Approximately when after the start of the trip is Janet riding the fastest? Explain.

(d) Are there any time intervals over which Janet's acceleration is positive? If so, which? Explain why you know this.

Continuation of problem 11.

(e) On the set of axes provided here, draw a graph of Janet's velocity. Be sure to label relevant axes with appropriate units and select an appropriate numerical scale for them. To help you in sketching the graph, another copy of the graph of $s(t)$ is included below the axes where you should sketch your graph of Janet's velocity.

