Math 131 - Quiz 6

Name _____

March 4, 2026

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (2 points) Compute the average rate of change of $f(t) = 2 + 3\sin t$ over the interval from $t = 0$ to $t = \pi/2$.

2. (8 points) An object is launched upward so that its height, in feet, after t seconds is given by

$$s(t) = -16t^2 + 64t + 192.$$

For each part of this problem, be sure to give units with your answer.

(a) What is the object's velocity at $t = 1$?

(b) Find the maximum height of the object.

(c) When does the object hit the ground?

(d) What is the speed of the object at the moment it hits the ground?

(e) What is the object's acceleration at time t?