

Name _____

- You have 15 minutes
- No calculators
- Show sufficient work

1. (4 points) The acceleration due to gravity near the surface of some planet is -8 m/s^2 . An object is shot upward from the surface of this planet and 12 seconds later it has fallen back to the surface. What is the velocity of this object 2 seconds after being shot?

2. (4 points) Find a formula for $f(x)$ given that $f''(x) = \frac{3 + 10\sqrt{x}}{\sqrt{x}}$, $f(1) = 14$ and $f'(1) = 18$.

3. (2 points) When Carl rode his bicycle yesterday, his speeds were always increasing between noon and 1:00 PM. His speeds are recorded every 15 minutes and listed in the table below.

Time	12:00	12:15	12:30	12:45	1:00
Speed (miles/hour)	12.5	15.0	20.0	22.0	25.0

(a) Approximate the total distance that Carl traveled between noon and 1:00 PM by using a left Riemann sum with $\Delta t = 15$ minutes.

(b) Approximate the total distance that Carl traveled between noon and 1:00 PM by using a right Riemann sum with $\Delta t = 15$ minutes.