

MA 2320: Quiz 4

Name: _____

1. Assume the acceleration is given by $a(t) = e^{2t}$. And assume that the velocity at time $t = 0$ is 3 and the position at time $t = 0$ is 5. Find the functions $v(t)$ and $s(t)$.
2. Assume the acceleration of a ball thrown up in the air is given by $a(t) = -32 \text{ ft/sec}^2$. And assume the initial position is 30 feet and initial velocity is 10 feet/sec.
 - (a) Find the functions $v(t)$ and $s(t)$.
 - (b) When does the ball stop?
 - (c) When does the ball hit the ground?
 - (d) How fast is the ball going when the ball hits the ground?
3. Find the area between the curves: $f(x) = x^3$ and $f(x) = 9x$
4. Find the area between the curves: $f(x) = \sin(x)$ and $f(x) = \cos(x)$ from $x = 0$ to $x = \pi/4$.
5. Find the area between the curves: $y^2 = x$ and $y = x - 2$.