

Name: _____

MA 2320 Quiz 3

1. Let $a(t) = -32$ feet per second squared. Assume we throw a ball upward at an initial velocity of 20 feet per second from the roof of a 20 feet high building.
 - (a) Find the $v(t)$ and $s(t)$ equations.
 - (b) At what time does the ball hit the ground?
 - (c) How fast is the ball moving when the ball hits the ground?
2. Let $a(t) = 27e^{3t}$. Assume the object is moving at 12 units per second at time zero and that the object's position is zero units at time zero. Find the $v(t)$ and $s(t)$ equations.
3. Let $f(x) = 4x^2$ and $g(x) = x^3$. Find the area between f and g .
4. Let $f(x) = \sin(x)$ and $g(x) = \cos(x)$. Find the area between f and g when $0 \leq x \leq \pi$.
5. Find the area of the region contained between $y = x - 2$ and $x = y^2$.
6. Find the area between contained within the region $y = \ln(x)$, $y = 0$ and $x = 2$.
7. Rotate the region contained between $y = 3x - 2$, $y = 0$ and $x = 6$ about the y-axis. Compute the volume.
8. Rotate the region contained between $y = 3x - 2$, $y = 0$ and $x = 6$ about the x-axis. Compute the volume.
9. Rotate the region contained between $y = x - 2$ and $x = y^2$ about the y-axis. Compute the volume.