Math 2320 - Test 1

Name:_____

1. Compute the integral from the definition (you may want to check your answer using the FTC II). $\int_0^1 3 - 2x \, dx$

2. $\int x^3(x^4+1)^{-7}\,dx$

3. $\displaystyle\int x^2 \sin(x^3) + \sqrt{x}\,dx$

4. Assume we toss an object straight up in the air so that $a(t) = -9.8$. And assume $v(0) = 49$ and $s(0) = 0$.

(a) What is the maximum height of the object?

(b) Between the time $t = 0$ and the time $t = 10$ compute the average height of the object.

5. Find the area between the functions $y = 2x^2$ and $y = 2x + 4$.

6. Define the region by $y = x^3$, $x = 0$ and $y = 7$ in the first quadrant. Find the volume of this region by revolving the region around the x-axis.

7. Compute

$$\int_0^{\pi/4} \sin^3(x) \cos^2(x) \, dx$$