Math 2320 - Test 1

Name:_____

1. Compute $\int_0^4 2x + 1\, dx$ by using the definition of the integral.

2. Let $a(t) = 6e^{2t}$. Assume the object is moving at -5 units per second at time zero and that the object's position is 3 units at time zero. Find the $v(t)$ and $s(t)$ equations. At what time is the object stopped?

3. Define the region as contained within the parabola $x = -y^2$ and below the line $y = x + 2$. Find the area of the given region.

4. Define the region as contained within the parabola $y = x^2$ and below the line $y = 6x + 16$. Find the volume of the given region rotated about the x-axis.

5. $\int e^{2x} \csc^2(e^{2x} + 1) + \tan^{-1}(x)\, dx$

6. $\int x^2 e^{4x} dx$

7. $\int xe^{4x^2}dx$

8. $\int x \sin(4x) dx$

9. $\int \ln(2x)dx$