Math 2320 - Test 1.1

Name:_____

1. Compute $\int_0^3 2x^2\,dx$ by using the definition of the integral.

2. Let $a(t) = 12\sin(2t)$. 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.

3. Define the region as contained within the parabola $x = 12 - 2y^2$ and below the line $x = y^2$. Find the area of the given region.

4. Define the region as below the function $y = e^{-x}$ and above the x-axis from $x = 0$ to $x = 7$. Find the volume of the given region rotated about the x-axis.

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

6. $\int xe^{3x}dx$

7. $\int x^2 \cos(2x) dx$

8. $\int \sin^2(2x)dx$

9. $\int \frac{1}{(9-x^2)^{3/2}} dx$