MATH 162 Sample Exam 2

Show work! No work, no credit.	Name:	Score	

1. Let $f(x) = Ae^{-6x}$, $0 \le x \le \infty$. Find the value of A so that $f(x)$ a probability distribution.

Ans:_____.

2. Let $y' = 1 + y$, $y(0) = 1$. Use Euler's method with $h = 0.1$ to approximate $y(0.3)$.

Ans:_____.

3. Solve the differential equation $(1 - x^2)y' = 2xy$, $y(0) = 4$.

Ans:_____.

4. Solve the differential equation: $xy' - 3y = x^3$, $y(1) = 10$.

y(x)=_____.

5. The curve $y = \frac{1}{3}x^{3/2}$, $0 \le x \le 12$ is rotated about the y-axis. Find the area of the resulting surface.

Ans:_____.

Extra Space

Score	
1	
2	
3	
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6 Solve: $y'' + 6y' + 13y = 0$.

Ans:_____.

7. Solve: $y'' + 36y = 0$, $y(0) = 4$, $y'(0) = 0$

Ans:_____.

8. Solve: $4y'' + 12y' + 9y = 0$

Ans:_____.

9. Find the length of the curve $x = \frac{1}{3}\sqrt{y}(y - 3)$, for $0 \le y \le 9$.

a) Set up the integral.

b) Compute the integral

Ans:_____.

Ans:_____.

10. Set up (do not compute!) the integrals for the centroid of the region bounded by $y = x^2$, $x = y^2$.

a) x-coord.

y-coord.

Extra space