

Math 252 X01
Test One

Time: 50 minutes
Total: 16 marks

Name: _____

1. [3 marks] Solve for y given that $y = 1$ when $x = \frac{\pi}{2}$:

$$\frac{dy}{dx} = y^2 + 1$$

2. [5 marks] Solve for y :

$$x^7 \frac{dy}{dx} + 2x^6 y = 9x^7 e^{3x}$$

3. [5 marks] Find an implicit solution (eliminate any logarithms, absolute values and fractions):

$$\frac{dy}{dt} = y^2 - 8y$$

4. [3 marks] Find an implicit solution if $y = 0$ when $x = 1$:

$$(2xe^{y^3} + 9 \sec y + 4x^3)dx + (3x^2y^2e^{y^3} + 9x \sec y \tan y)dy = 0$$