Math 112
Answers: Section 2.5 Practice Problems

2.5 #1: No, there are infinitely many other solutions.

2.5 #3: (a)$y(x) = 3x$ is one solution. The general solution is $y(x) = 3x + C$. (b) There are infinitely many solutions of the DE. They differ from each other by a constant.

2.5 #5: Yes.

2.5 #9: The general solution is $y(x) = 3x^2 + 5x + C$. The initial condition $y(1) = 2$ means that $y = 3x^2 + 5x - 6$ is the unique solution of the IVP.

2.5 #17: $y' = 3x^2$ so $xy' = 3y$

2.5 #19: Yes.

2.5 #21: No.

2.5 #23: $y'(t) = \frac{1}{3y^2}$

2.5 #27: $x^3 y'' + x^2 y' - xy = x$

2.5 #43: $T' = k(T - S)$