SCRAMBLED HOMEWORK PROBLEMS

1. $y' + 2ty = 2te^{-t^2}$

2. $(2x^2y + 2x)y' = -(2xy^2 + 2y)$

3. $\sin(t)y' + cos(t)y = e^t.$

4. $(2x - y)dy - (4y - 3x)dx = 0.$

5. $(e^x \sin(y) - 2y\sin(x))dx +$
$(e^x \cos(y) + 2\cos(x))dy = 0.$

6. $ty' + y = t(2e^t - y).$

7. $xy' = 1 - y^2.$

8. $(y/x + 6x)dx + (\ln(x) - 2)dy = 0.$

9. $\frac{dy}{dx} = \frac{x+3y}{x-y}.$

10. $y' + te^t = t^{-1}y.$

11. $(9x^2 + y - 1)dx - (4y - x)dy = 0; \quad y(1) = 0.$

12. $t(y' + y - 1) = 1 - y; \quad y(\ln(2)) = 1.$

13. $y' = \frac{2x}{y+x^2y}; \quad y(0) = -2.$

14. $ty' + 2y = \cos(t)/t; \quad y(\pi) = 0.$

15. $\frac{dr}{d\theta} = r^2/\theta; \quad r(1) = 2.$