Name: _____ ANSWER KEY _____   Score: _____

1. (2 points) Solve the following differential equation: $\dfrac{dy}{dx} = 6y^2 x$

   Write your final answer such that y is a function of x, i.e. in the form $y = $ [function of x]

$$dy = 6y^2 x \, dx$$
$$y^{-2} \, dy = 6x \, dx$$
$$\int y^{-2} \, dy = \int 6x \, dx$$
$$-\frac{1}{y} = 3x^2 + C$$
$$y = -\frac{1}{3x^2 + C}$$