In class work **4(a)** has questions **1** through **4** with a total of **6** points. Turn in your work at the end of class *on paper*. This assignment is due *Thursday 24 August 13:20*.

1. Show that  $3y^2 = 2x^2 + C$  is a GS to the DE  $y \frac{dy}{dx} = x^2$ .

1 2. Find a GS to the DE  $y \frac{dy}{dx} = \cos(2x)$ .

1 3. Find a GS to the DE  $\frac{1}{x} \frac{dy}{dx} = \frac{1}{y}$ .

- 4. Look up the derivatives of the inverse hyperbolic functions in the QRS. Use these results to find the following antiderivatives
- 1 (a)  $\int \frac{1}{\sqrt{25x^2+1}} dx$

1 (b)  $\int \frac{1}{\sqrt{x^2-12}} dx$ 

1 (c)  $\int \frac{1}{x^2 - 81} dx$