MATH 202, Fall 2023 **Name:** _____

In class work week 4(a) **Row and Seat**: _____

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] 1. Show that $3y^2 = 2x^2 + C$ is a GS to the DE $y\dfrac{\mathrm{d}y}{\mathrm{d}x} = x^2$.

[1] 2. Find a GS to the DE $y\dfrac{\mathrm{d}y}{\mathrm{d}x} = \cos(2x)$.

[1] 3. Find a GS to the DE $\frac{1}{x}\frac{\mathrm{d}y}{\mathrm{d}x} = \frac{1}{y}$.

4. Look up the derivatives of the inverse hyperbolic functions in the QRS. Use these results to find the following antiderivatives

[1] (a) $\int \frac{1}{\sqrt{25x^2+1}}\,\mathrm{d}x$

[1] (b) $\int \frac{1}{\sqrt{x^2-12}}\,\mathrm{d}x$

1 (c) $\int \frac{1}{x^2-81}\,\mathrm{d}x$