

1. $\cosh(\ln 2) =$

2. If $f(x) = e^{\sinh x} + (\tanh x)^2$, then $f'(x) =$

3. Solve the following differential equations

(a) $\frac{dy}{dx} = \frac{2x^2 + 1}{xe^y}$ where $x > 0$

(b) $\sinh x \frac{dy}{dx} + 3 (\cosh x) y = \cosh x \cdot \sinh x$

4. Evaluate the following integrals

(a) $\int_0^{2\pi} \sqrt{\frac{1 - \cos x}{2}} dx$

(b) $\int \frac{x^2 + 2}{x^2 + 1} dx$

Disclaimer – If this were an actual quiz I would have given you only one of (a) and (b) for problems 3 and 4. But since this is just a sample quiz, I decided to share both of my choices with you.