1 Find the Maclaurin series for $\cosh x$.

5 points

2 (a) Find the Taylor series at $x = 0$ of

$$\cot^{-1} x, \quad 0 < x < 1,$$

using the derivative of $\cot^{-1} x$.

(b) Show that

$$\tan^{-1} x = \frac{\pi}{2} - \frac{1}{x} + \frac{1}{3x^2} - \frac{1}{5x^5} + \cdots,$$

where $x > 1$.

5 points