Name:_____

Math 121 Self-Assessment Quiz #3 February 23, 2022

• Please see the course webpage for the answer key.

1. Compute $\lim_{x\to\infty}\left(\frac{6}{x}\right)^{\frac{1}{2+\ln x}} =$

2. Compute $\lim_{x\to 0}\dfrac{\cosh(4x)-1-\arctan(4x)+4x}{\ln(1-x)+\arcsin x} =$

3. $\lim_{x\to 0}\ \dfrac{1-e^{-3x}-\arctan(3x)}{x^2}$

4. $\lim_{x\to\infty}\ \left(1-\dfrac{2}{x^3}\right)^{7x^3}$

5. $\lim_{x\to\infty}\ \left(\arcsin\left(\dfrac{1}{x}\right)+e^{\frac{1}{x}}\right)^{x}$

6. Compute $\displaystyle\int_0^{\sqrt{3}} x\arctan x\ dx$

7. Show $\displaystyle\int_1^{e^4}\frac{\ln x}{\sqrt{x}}\ dx = 4e^2+4$