Math 182 Honors Quiz 9 Version A

1. Find the following derivatives:

(i) $\dfrac{d}{dx} x^{\sin 2}$

(ii) $\dfrac{d}{dx} 2^{\sin x}$

(iii) $\dfrac{d}{dx} \left(x \sin(2^x) \right)$

(iv) $\dfrac{d}{dx} \arctan \left(|x|^3 \right)$

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2. Find the following integrals:

(i) $\displaystyle\int \frac{1}{(x+1)(x-2)}\,dx$

(ii) $\displaystyle\int \frac{1}{x^2+4x+13}\,dx$

(iii) $\displaystyle\int \arctan(4x)\,dx$

(iv) $\displaystyle\int \tan(3x)\,dx$