

Math 181 Honors Quiz 11 Version A

1. Find the following derivatives:

(i) $\frac{d}{dx} \left(\frac{e^x}{1+x^2} \right)$

(ii) $\frac{d}{dx} (x \ln x)$

(iii) $\frac{d}{dx} |x|^3$

(iv) $\frac{d}{dx} (3+x^2)^{x+1}$

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2. Find the following antiderivatives:

(i) $\int x^3 dx$

(ii) $\int \sin 3x dx$

(iii) $\int \frac{1}{4+x^2} dx$

(iv) $\int \ln x dx$