Quiz 5 Math 232, Calculus III, Spring 2018 Name:

1. Differentiate the following:

(a) $\frac{d}{dx}[k] =$

(b) $\frac{d}{dx}[\ln x] =$

(c) $\frac{d}{dx}\left[e^{f(x)}\right] =$

(d) $\frac{d}{dx}[\cot(x)] =$

(e) $\frac{d}{dx}\left[\frac{f(x)}{g(x)}\right] =$

(f) $\frac{d}{dx}[\sec(x)] =$

(g) $\frac{d}{dx}\left[\sin^{-1}(x)\right] =$

(h) $\frac{d}{dx}[f(x)g(x)] =$

(i) $\frac{d}{dx}[x^n] =$

2. Integrate the following:

(a) $\int x^n \, dx =$

(b) $\int \frac{1}{x+1} \, dx =$

(c) $\int a^x \, dx =$

(d) $\int \sin(bx) \, dx =$

(e) $\int \sec^2(x) \, dx =$

(f) $\int \tan(x) \, dx =$

(g) $\int \csc(x) \, dx =$

(h) $\int \frac{1}{1+x^2} \, dx =$