

## Quiz 4

NAME:

**Question 1.**(5 POINTS.) EVALUATE  $\frac{d}{dx} \sin e^{2x}$ .

LET  $u = e^{2x}$ , THEN  $du = 2e^{2x} dx$

$$\frac{d}{dx} \sin e^{2x} = \frac{du}{dx} \cos u = 2e^{2x} \cos e^{2x}$$

**Question 2.**(5 POINTS.) EVALUATE  $\int (\sin^{12} x) \cos x \, dx$ .

LET  $u = \sin x$ , THEN  $du = \cos x dx$ ,

$$\int (\sin^{12} x) \cos x \, dx = \int u^{12} \, du = \frac{1}{13} u^{13} + C = \frac{1}{13} \sin^{13} x + C$$