

# Math 2215 - Calculus 1

Quiz #5 - 2005.09.20

Solutions

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1. Compute  $\frac{d}{dx} \sin^3(x^2 + 3)$ .

The chain rule must be applied:

$$\frac{d}{dx} \sin^3(x^2 + 3) = 3 \sin^2(x^2 + 3) \cdot \cos(x^2 + 3) \cdot 2x$$

2. Compute  $\frac{d}{dr} (e^{r^2} \cos(2r))$ .

Here the chain rule comes only after the product rule:

$$\frac{d}{dr} (e^{r^2} \cos(2r)) = 2re^{r^2} \cos(2r) - 2e^{r^2} \sin(2r)$$