Assignment 0

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January 20, 2026

1. By the chain rule from calculus, we have:

$$\frac{d}{dx}\sin(x^2+6x) = \cos(x^2+6x)\frac{d}{dx}(x^2+6x) \tag{1}$$

$$= \cos(x^2+6x)(2x+6) \tag{2}$$

2. DeMorgan's law says

$$\neg(A \cap B) \equiv \neg A \cup \neg B \tag{3}$$

3.

A	B	$A \wedge B$
T	T	T
T	F	F
F	T	F
F	F	F

4. $\mathbb{R}$ denotes the real numbers. $\mathbb{N}$ denotes the natural numbers. It is of course the case that $\mathbb{N} \subseteq \mathbb{R}$.