

# Math Homework

John Doe

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## Problem 1

a)

Proof

> Let  $a = 0$  and arbitrary  $b \in \mathbb{N}$ .

>  $0 \in \mathbb{N}$ , so  $a \in \mathbb{N}$ .

> By definition of natural numbers, 0 is the smallest natural number. Thus, the statement  $0 \leq b$  holds true, since arbitrary  $b$  can only be  $\geq 0$ .

> Thus,  $a \leq b$  when  $a = 0$ , satisfying the condition  $\square$ .

b)

$$x^2 - 2x - 8 = 0; (x - 4)(x + 2) = 0, x = 4, -2.$$

Roots of Quadratic Equation: 4, -2.