

Homework 1

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Question 1

$$a^2 + b^2 = c^2$$

Question 2

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Question 3

$$1 + 2 + 3 + 4 + \cdots + 98 + 99 + 100 = \sum_{x=1}^{100} x$$

$$x_1 + x_2 + x_3 + \cdots + x_n = \sum_{i=1}^n x_i$$

$$x_1 \times x_2 \times x_3 \times \cdots \times x_n = \prod_{i=1}^n x_i$$

$$f(x) = \int_b^a x^2 dx$$

Question 4

$f: \mathbb{Z} \mapsto \mathbb{N}$ defined by

$$f(x) = \begin{cases} 2x & \text{if } x \geq 0 \\ -2x - 1 & \text{if } x < 0 \end{cases}$$

Question 5

$$V = \{x \in \mathbb{Z} | x < 100\} \cap \{x \in \mathbb{Z} | x \text{ is prime}\}$$
$$V \subset W$$

Question 6

$$((\alpha \rightarrow \beta) \wedge (\beta \rightarrow \gamma)) \rightarrow (\alpha \rightarrow \gamma)$$

Question 7

Consider the following statements about integers:

1. For every x , there is a y , such that $x + y = 0$
2. There is a y , such that for every x , we have $x + y = 0$

In symbols, these statements are written respectively:

1. $\forall x \exists y x + y = 0$
2. $\forall y \exists x x + y = 0$

Question 8

Insert answer for question 8 here.

Question 9

Insert answer for question 8 here.