

# Math 214 writing tips

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# Using Symbols

- **Never start a sentence with a symbol.**

**Do Not:**  $x^2 - 4 = 0$  has roots 2 and  $-2$ .

**Do:** The equation  $x^2 - 4 = 0$  has roots  $x = 2$  and  $x = -2$ .

- **Except when discussing logic, avoid using the logic symbols  $\Rightarrow, \forall, \exists$  in your sentence.**

**Do Not:**  $\forall x \in \mathbb{R}, \exists y \in \mathbb{R}$  such that  $xy = 1$ .

**Do:** For every  $x \in \mathbb{R}$ , there exists  $y \in \mathbb{R}$  such that  $xy = 1$ .

- **Do not mix words and symbols improperly.**

**Do Not:** Every integer  $\geq 2$  is a prime or is composite.

**Do:** Every integer greater or equal to 2 is a prime or is composite.

# Using Symbols

- **Explain the meaning of every symbol that you introduce.**

- **Use “frozen symbols” properly.**

Use  $m, n$  typically for integers, not real numbers; use  $x, y$  typically for real numbers.

Use  $A, B$  typically for sets, not elements of a set; use  $a, b$  for elements.

Use  $f$  typically for a function.

- **Use consistent symbols.**

**Do Not:** Let  $x$  and  $a$  be two integers.

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$$x = 2a + 1, \quad y = 2b + 1.$$

The sum of  $x$  and  $y$  is

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which is an even number.

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For brevity, it is okay to write “Then there exist  $a, b \in \mathbb{Z}$ .”

# More

- 1 Usually do not use “clearly, obviously, of course, certainly” in your proof.
- 2 Do not use “I will show that”, use “We will show that”.
- 3 Do not use “for any integer”, but use “for every integer”, or “for some integer”.
- 4 Use variety of words such as “Therefore, Thus, Hence, Consequently, So, It follows that, This implies that”, and do not always use the same one.