3rd Year Writing Workshop

"If you want to be a writer, you must do two things above all others: read a lot and write a lot."

Stephen King

Reading

Read the two pieces of mathematical writing.
Consider:

- the audience
- the style
- the message
- how effective it is in communicating that message
- any gaps / unanswered questions
- likes & dislikes

Some Guidelines (Francis Edward Su)

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1. Know your audience.

- School children
- General public
- General scientists
- Mathematicians not in your field
- Mathematicians in your field
- Collaborators
- Yourself
- Your supervisor
- Your examiner

Some Guidelines (Francis Edward Su)

1. Know your audience.
2. Friendly tone.

DOs

- Present tense
- Inclusive pronouns: “We construct...”
- Guide the reader: “Recall that...”

DON’Ts

- Confuse / intimidate
- Patronise: “It’s obvious that...”
- Belittle: “...some basic algebra...”

Some Guidelines (Francis Edward Su)

1. Know your audience.
2. Friendly tone.
3. Write in sentences.

$$f(x) = g(x)$$
$$x^2 = x + 6$$
$$x^2 - x - 6 = 0$$
$$(x-3)(x+2) = 0$$
$$x = 3, \ x = -2$$

The points where $f(x) = x^2$ and $g(x) = x + 6$ intersect are those that solve the equation defined by the functions being equal, that is

$$x^2 = x + 6.$$

Rearranging this equation gives the following quadratic

$$x^2 - x - 6 = 0,$$

and factorising this gives:

$$(x-3)(x+2) = 0$$

which is satisfied when $x = 3$ or when $x = -2$.

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Consider "$A = 5$":

Does this mean:

- "Let $A = 5$"?
- "Suppose $A = 5$"?
- "Therefore $A = 5$"?

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Avoid using:

$\forall$, $\Rightarrow$, $\exists$, *s.t.*, *iff*

Some Guidelines (Francis Edward Su)

1. Know your audience.
2. Friendly tone.
3. Write in sentences.
4. Be picky.

- More $\neq$ Better
- You are not Agatha Christie

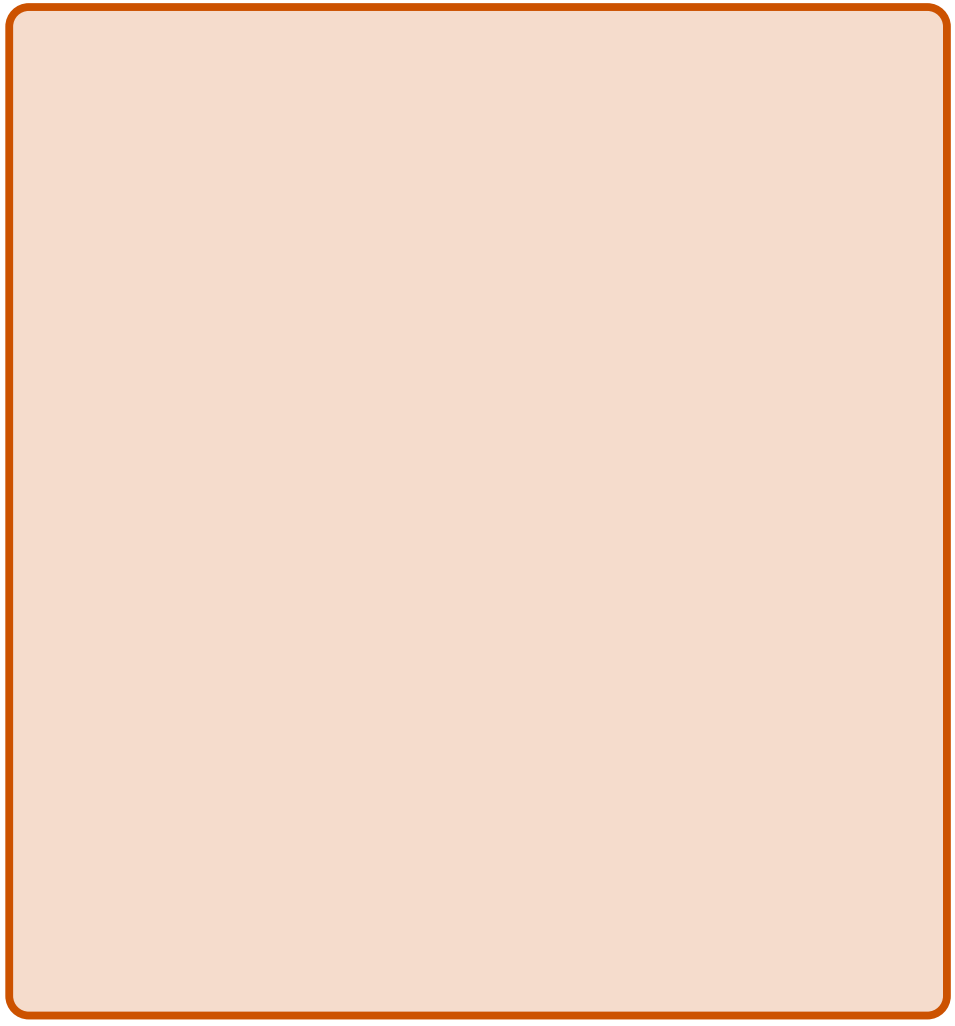
Some Guidelines (Francis Edward Su)

1. Know your audience.
2. Friendly tone.
3. Write in sentences.
4. Be picky.
5. Use and highlight structure.

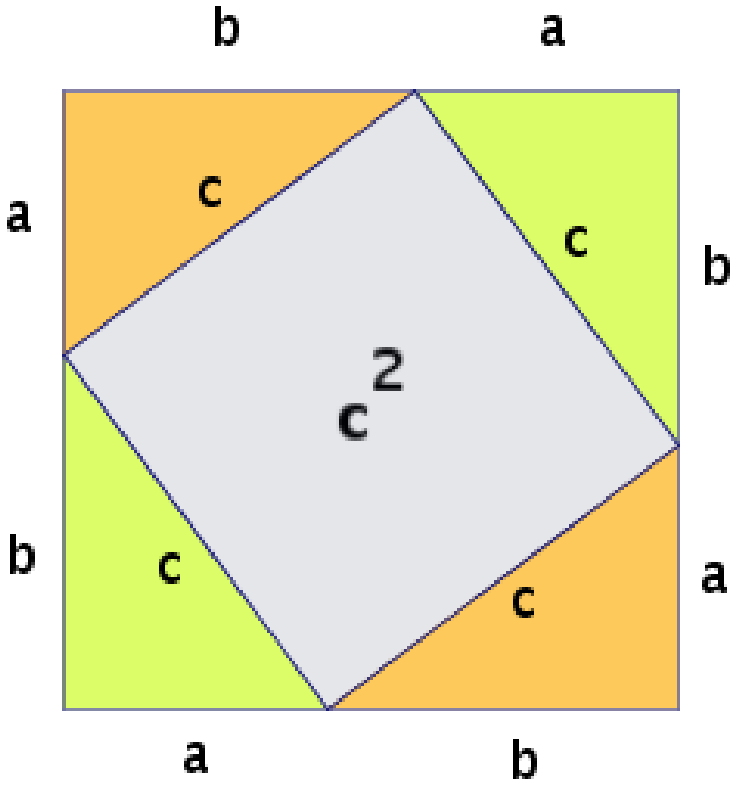
- Meaningful paragraphs
- Modularise (definitions, lemmas, theorems)
- Use examples
- Tell the reader what the structure is
- Tell the reader where they currently are

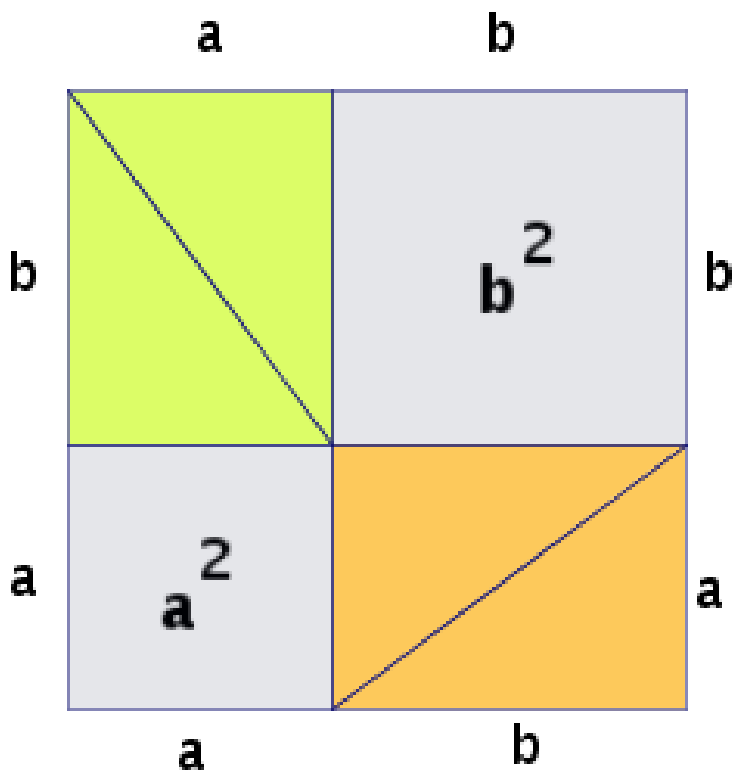
Some Guidelines (Francis Edward Su)

1. Know your audience.
2. Friendly tone.
3. Write in sentences.
4. Be picky.
5. Use and highlight structure.
6. Refine and simplify.



Writing





Write 1 page explaining this proof.