Upcoming responsibilities!

- Today (Friday 10 September):
  - Crowdmark submission practice
  - Submitted through Crowdmark
- Monday 13 September:
  - Complete first quiz
  - Submitted through Mobius (via LEARN)
- Wednesday 15 September:
  - Complete second quiz
  - Submitted through Mobius (via LEARN)
- **Wednesday 15 September:**
  - **Complete first Written Assignment (WA)**
  - **Submitted through Crowdmark**

MATH 135: Lecture 2

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10 September 2021

Assignment 1!

- Follow instructions perfectly.
  - If it says not to do something (for example using something that wasn't covered in the chapter), you can lose marks
- 1 is not a prime number.
- Expressing negations without using negation symbol: keep in mind things like: ¬ (a = b) ➔ a ≠ b
- Section 1.4.3 is important!
- sin(x) = log(x)
  - Transcendental Equation
- If you can't figure out if a statement is True or False, consider the negation of the statement! It might be easier that way!
- Don't be afraid to plug in numbers and try to find a counter-example or example by brute force!
  - e.g. for the variables (m,n), try each of m=0,-1,+1,-2,+2,-3,+3 with each of n=0,-1,+1,-2,+2,-3,+3
    - 49 in total to check on WolframAlpha, but many will be the same since things like x^2 are the same for x=-2,+2
- If English isn't your native language:
  - Do you know what an "inequality" is?
  - "With justification" vs "without justification" ?
- "Truth value" of a statement is just, whether the statement is false (Truth value = "False") or true (Truth value = "True")
- When verifying a statement like "For all m …." you can split m in to cases (zero vs non-zero, even vs odd, etc.)

Aiming for perfection on assignments

- How much of your final grade is it worth?
- When you're studying for the exam, you will wish you knew everything from the assignments.

If a number's last digit is 5, then is the last digit of its square *always* 5?

S = {Integers for which the last digit is 5}

$\forall N \in S \ , \ N^2 \in S$?

$\forall N \in S, \ \exists a \in \mathbb{Z}$ s.t. $N = 10a + 5$

$$(10a + 5)^2 = 100a^2 + 100a + 25$$
$$= 100a(a+1) + 25$$

$\exists b \in \mathbb{Z}$ s.t. $N^2 = 100b + 25$

$\forall b \in \mathbb{Z}, \ \ 100b + 25 \in S$

$\therefore \ N^2 \in S \ , \forall N \in S$