Enrol in a tutorial if you haven’t already done so. Tutorials start on Monday. You will be able to switch tutorials even after registration closes.

Course website: http://uoft.me/MAT137

Today we will discuss conditionals.

Homework before Mondays’s class: watch videos 1.10, 1.11, 1.12, 1.13.
1. If $x \in \mathbb{Z}$, then $x \in \mathbb{R}$.

2. $x \in \mathbb{R} \Rightarrow x \in \mathbb{Z}$.

3. $x > 7$ if and only if $5x > 35$.

4. $x > 7 \iff 5x > 40$

5. $x > 7 \iff 5x > 20$
All of my friends’ names begin with a vowel. Which of the following statements are definitely true?

1. Alice is my friend.
2. Bob is not my friend.

Write negation of the statement:

*If this person is my friend, his/her name begins with a vowel.*
Let $A$ be a subset of the real numbers. Suppose that we know that the following statement is true:

\[
\text{If } x \in A \text{ and } x > 3, \text{ then } x = 12. 
\]

Which of the following are possible?

1. $A = (0, 3)$.
2. $A = \{2, 4, 12\}$.
3. $A = \{1, 2, 12\}$.
Four cards lie on a table in front of you. Each card has a letter on one side and number on the other. Consider the following statement:

*If a card has an even number on one side, then it has a vowel on the other side.*

Which of the following statements are equivalent to the original, which are its negation, and which are neither?

1. If a card has an odd number on one side, then it has a vowel on the other side.
2. If a card has a vowel on one side, then it has an even number on the other side.
3. There is a card which has an even number on one side and a consonant on the other side.
4. There is a card which has an odd number on one side and a vowel on the other side.
5. If a card has an consonant on one side, then it has an odd number on the other side.
Consequences of a False statement

A false statement can imply anything.

**Theorem**

*If* $1 = 2$ *then the Sun is made of butter.*

Prove it!