

# CSC165 fall 2019

Mathematical expression:  
predicate logic

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BA4270 (behind elevators)

Web page:

<http://www.teach.cs.toronto.edu/~heap/165/F19/>

Using Course notes: Mathematical Expression: predicate  
logic

# Outline

back to sets for a minute...

bi-implication etcetera

predicates

quantifiers

multiple quantifiers

mixed quantifiers

negation

number theory intro

notes





## converse, contrapositive

“If I am wearing sneakers, then it is raining.”

“If I am not wearing sneakers, then it is not raining.”

# what's a predicate?

$n > 7.2$

$x$  is tall

# predicate definitions

# quantifiers $\forall$ and $\exists$

$n > 7.2$





# quantified binary predicates

$$x + y = 17$$



order matters!

$$x + y = 17$$

$\exists$ : examples

$\forall$ : lack of counterexamples

# negate quantified predicates







# properties of integers, mostly $\mathbb{N}$

# divisibility

# primes

# Notes

