LaTeX tutorial

Your name here

September 12, 2017

1. Use summation notation (i.e. $\sum_{i=1}^{n}$) to rewrite the following expression without ellipses:

$$1 + \frac{1}{4} + \frac{1}{9} + \frac{1}{16} + \cdots =$$

(Does this sum converge, and if so, do you know what the value of the sum?)

2. For each of the following sets (their names are A, B and C), correct the poorly-formed set builder notation:

$$A = \{xin\mathbb{Z} : x\}$$
$$B = x \in : x > 1$$
$$C = \{\mathbb{Z} : x <= 1$$

Hint: detexify [`http://detexify.kirelabs.org/`] could help you find the LaTeXcode for any particular symbols you may want, like 'is less than or equal to'.

3. If $A = \{0, \emptyset\}$, then $\mathcal{P}(A) =$

4. The quadratic formula gives an explicit expression for the solutions to an equation $ax^2 + bx + c = 0$. Typeset the quadratic formula below.

5. Here's a definition of an odd number:

Definition 1. *An integer n is* odd *if $n = 2a + 1$ for some integer $a \in \mathbb{Z}$.*

Notice how I have typset the word we are defining ('odd') to emphasize it.

Typeset the definition of subset below.

6. In Chapter 2 we will learn about truth tables. When we get to that topic, you can use the example below as a reference. This is the *truth table* for $P \wedge Q$ (this is the symbolic way to write 'P and Q'):

P	Q	$P \wedge Q$
T	T	T
T	F	F
F	T	F
F	F	F

In this example, in the first row, we see that if P is true, and Q is true, then 'P and Q' is also true. Typeset the truth table for $P \vee Q$ (this is the symbolic way to write 'P or Q')

7. Compute a few of the sums in the following sequence:

$$1,\ 1+3,\ 1+3+5,\ 1+3+5+7,\ 1+3+5+7+9,\ \ldots$$

Do you see a pattern? Write a formula expressing the pattern you found.