LaTeX tutorial

Your name here

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

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

Do you know what the value of this sum is?

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

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

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

Can you also correct the weird alignment so it looks better? Notice the `align` environment and the & symbols in the code.

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

(d) Here's a definition of an odd number:

Definition 1. *An integer n is* odd *if it has the form $n = 2k + 1$ for some integer k.*

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

Use the `theorem` environment to typeset a nicely stated theorem which says what the parity of a sum of two odd numbers will be. Hint: check your statement with me.

(e) Use the `proof` environment to typeset a proof of your theorem. Hint: check your proof with me.

(f) Fill in the third column of this *truth table* for $P \wedge Q$ (this is the symbolic way to write 'P and Q'):

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

In other words, for the first row, if P is true, and Q is true, is it true or false that 'P and Q'?

(g) 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.

(h) Thinking back to the first-day activity, can you typset a conjecture you made about the edges, vertices and faces of polyhedra?