

Math 187 Assignment 2

Dr. Holmes

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This assignment is due Tuesday, June 15.

1. Write the following sentences using only math symbols.
 - (a) The sum of two odd numbers is even.
I remind you that “ n is odd” can be written $(\exists x \in \mathcal{N}.n = 2x - 1)$.
 - (b) There do not exist three numbers such that the sum of the cubes of the first two equals the cube of the third.
 - (c) The square of a number is always strictly larger than the number unless that number is 1.
2. Translate the following symbolic expressions into more or less colloquial mathematical English (each of these statements translates into something reasonably sensible).
 - (a) $(\exists x \in \mathcal{N}.n = 7x)$
 - (b) $(\forall x, y \in \mathcal{N}.xy = 37 \rightarrow x = 1 \oplus y = 1)$
 - (c) $(\forall x, y \in \mathcal{N}.(\exists z, w.x = 2w - 1 \wedge y = 2z - 1) \rightarrow (\exists u.x + y = 2u))$
3. Prove that the sum of two even natural numbers is always even. You need to give a convincing argument; you are welcome to follow my guidelines for proof writing but not required to do so.