CS 5000: Theory of Computability
Assignment 12

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Learning Objectives

1. Gödel Coding and Decoding

2. Universality Theorem

Problem 1 (1 point)

Compile the following L-program

```
[A1] X1 <- X1 - 1
     Y  <- Y + 1
     IF X1 != 0 GOTO A1
```

Problem 2 (2 points)

Reverse compile 575.

Problem 3 (2 points)

Let $n \in N$. Show that there are infinitely many $k \in N$ such that $(\forall x)\Phi(x, n) = \Phi(x, k)$.

What to Submit?

Save your solutions in hw12.pdf and submit it in Canvas.