Due: Friday, November 18, beginning of tutorial

NOTE: Each problem set counts 10% of your mark, and it is important to do your own work. You may consult with others concerning the general approach for solving problems on assignments, but you must write up all solutions entirely on your own. Copying assignments is a serious academic offence and will be dealt with accordingly.

1. Do Exercise 8, page 64 of the NOTES: (Show that \( \#R(x) \) is primitive recursive if \( R(x) \) is primitive recursive, and show that \( \pi(x) \) is primitive recursive.)

2. Do Exercise 12, page 69 of the NOTES.
  (Prove that there is no (total) computable universal relation \( RU(x, y) \) for all computable unary relations.)

3. Do the case \( A_3 \) in Exercise 6 page 75 of the NOTES. Here

\[
A_3 = \{ x \mid \text{dom}(\{x\}) \text{ is finite} \}
\]

Use the S-m-n Theorem.

4. Do Exercise 8, page 75 of the NOTES.