[A 3.1] Let $B$ be the following combinator. $Bxy = yx$. First, establish the type of this combinator abstractly. Then type this into OCaML and write down what it reports on the type of $B$. Describe the function $BIKS$ and verify the result by asking OCaML. Further, what type does $BIK$ have? Give the most general solution and verify it with OCaML.

[A 3.2] Show that $S(K(SI))K$ is identical to $B$. Do this in two steps: first, calculate its type and show that it can be unified with the type of $B$. Second, apply it to $x$ and $y$ and show that you get $yx$.

[A 3.3] Write a program that translates an integer into English. For example, on input 6789010191 it will return

six thousand seven hundred eighty nine
million ten thousand one hundred ninety one

For higher numbers let it use million million for $10^{12}$, million million million for $10^{18}$ and so on.

[A 3.4] Write a program that forms the plural of English nouns taking notice of various cases that arise (car: cars, bus:busses, bush:bushes, sheep: sheep).