# Worksheet 3 Review 2

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## Question 1

a. $Correct(my\_prog) \land Python(my\_prog)$

b. $\forall x \in P,\ \neg Correct(x) \Rightarrow Python(x)$

> **Correct Solution:**
> $\exists x \in P,\ \neg Correct(x) \land Python(x)$

c. $\forall x \in P, Python(x) \Rightarrow \neg Correct(x)$

d. $\forall x \in P, \neg Correct(x) \Rightarrow Python(x)$

e. There is a program that is written in *Python* and is *Correct*

f. All programs are not written in *Python* and is *Correct*

g. There is a program that is *Correct* and not written in *Python*

h. All programs that are correct is not written in *Python*, and all programs that are *Correct* is not written in *Python*.

## Question 2

a. Either all programs that are written in *Python* is *Correct*, or all programs that are written in *Python* are not *Correct*

b. $(\exists x \in P,\ Python(x) \land Correct(x)) \Rightarrow (\forall x \in P, Python(x) \land Correct(x))$

c. The difference is that in statement 1, each divisibility claims can be validated with different natural numbers where as in statement 2, the two claims must be validated with a single natural number.

   The statement 1 is true, where as statement 2 is false (consider counter example of $x = 7$)

## Question 3

## Question 4

## Question 5