

Part 1. Jiashuo Zhang (1365330)

1. a. 62

b. 17

c. -4

2. a. It is a function that takes a number as its argument.

This function doubles its argument and return the result multiplied by 3.

The value bound in the closure is "thing", which is 3. The "f" is a function that doubles its argument. Here f is taken as an argument and used in $(f\ x)$.

The result of $(f\ x)$, which is $(\text{double } x)$, will be multiplied by "thing", which is 3.

b. mystery is the function in a. (make-thing 3 double)

In $(\text{lambda } (x) (* \text{ thing } (f\ x)))$,
thing is 3 and f is double.

The parameter x is 5 that we give in $(\text{mystery } 5)$.

The result is $(* 3 (\text{double } 5)) = \boxed{30}$