

6.7

grammar Rule	semantic Rules
$\text{decl} \rightarrow \text{var-list} : \text{type}$	$\text{var-list.dtype} = \text{type.dtype}$
$\text{var-list1} \rightarrow \text{var-list2}, \text{id}$	$\text{var-list2.dtype} = \text{var-list1.dtype}$ $\text{id.dtype} = \text{var-list1.dtype}$
$\text{var-list} \rightarrow \text{id}$	$\text{id.dtype} = \text{var-list.dtype}$
$\text{type} \rightarrow \text{integer}$	$\text{type.dtype} = \text{int}$
$\text{type} \rightarrow \text{real}$	$\text{type.dtype} = \text{float}$

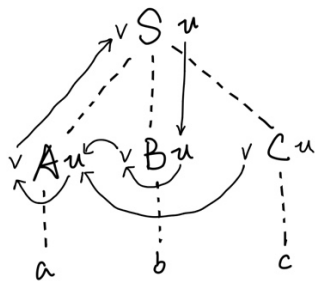
6.8

$\text{decl} \rightarrow \text{id var-list}$
 $\text{var-list} \rightarrow , \text{id var-list} \mid : \text{type}$
 $\text{type} \rightarrow \text{integer} \mid \text{real}$

grammar Rule	semantic Rules
$\text{decl} \rightarrow \text{id var-list}$	$\text{id.dtype} = \text{var-list.dtype}$
$\text{var-list1} \rightarrow , \text{id var-list2}$	$\text{var-list1.dtype} = \text{var-list2.dtype}$ $\text{id.dtype} = \text{var-list2.dtype}$
$\text{var-list} \rightarrow : \text{type}$	$\text{var-list.dtype} = \text{type.dtype}$
$\text{type} \rightarrow \text{integer}$	$\text{type.dtype} = \text{int}$
$\text{type} \rightarrow \text{real}$	$\text{type.dtype} = \text{float}$

6.13

a.



按照

$B.u = S.u$
 $B.v = B.u$
 $C.v = 1$
 $A.u = B.v + C.v$
 $A.v = 2 * A.u$
 $S.v = A.v$

顺序计算，即 $S.u \ B.u \ B.v \ C.v \ A.u \ A.v \ S.v$ 。

b.

$$S.u = 3$$

$$B.u = S.u = 3$$

$$B.v = B.u = 3$$

$$C.v = 1$$

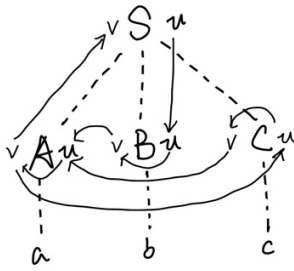
$$A.u = B.v + C.v = 4$$

$$A.v = 2 * A.u = 8$$

$$S.v = A.v = 8$$

The value of $S.v$ is 8.

c.



$$S.u = 3$$

$$B.u = S.u = 3$$

$$B.v = B.u = 3$$

$$C.u = A.v = 2 * A.u = 2 * (B.v + C.v) = 2 * (3 + C.v) = 2 * (3 + C.u - 2)$$

$$C.u = -2$$

$$A.v = C.u = -2$$

$$S.v = A.v = -2$$

The value of $S.v$ is 2.