

## Chapter 6 Exercises

8.

a) xy\$xy

i	ch	Stack
0	x	x
1	y	xy
2	\$	xy
3	x	inLanguage becomes false because ch != ch on top of the stack

c) xy\$y

i	ch	Stack
0	x	x
1	y	xy
2	\$	xy
3	y	x
4		i = length of aString, and aStack is not empty, so aString is not in the language

e) xx\$xx

i	ch	Stack
0	x	x
1	x	xx
2	\$	xx
3	x	x
4	x	
5		

aString is in the language.

11.

a) a b c + -, a = 7, b = 3, c = 12

ch	op1	op2	Stack
a			a
b			a b
c			a b c
+	b	c	a (15)
-	a	15	-8

c)  $a b + c - d e * +$ ,  $a = 7$ ,  $b = 3$ ,  $c = 12$ ,  $d = -5$ ,  $e = 1$

ch	op1	op2	Stack
a			a
b			a b
+	a	b	10
c			(10) c
-	10	c	-2
d			(-2) d
e			(-2) d e
*	d	e	(-2) (-5)
+	-2	-5	-7

12.

a)  $a - b + c$

ch	postfixExp	Stack
a	a	
-	a	-
b	a b	-
+	a b -	+
c	a b - c	+
	a b - c +	

c)  $a / (b * c)$

ch	postfixExp	Stack
a	a	
/	a	/
(	a	/ (
b	a b	/ (
*	a b	/ ( *
c	a b c	/ ( *
)	a b c *	/ (
	a b c *	/
	a b c * /	

e)  $(a + b)^* c$

ch	postfixExp	Stack
(		(
a	a	(
+	a	( +

b	a b	( +
)	a b +	
*	a b +	*
c	a b + c	*
	a b + c *	

g) a - (b + c)

ch	postfixExp	Stack
a	a	
-	a	-
(	a	- (
b	a b	- (
+	a b	- ( +
c	a b c	- ( +
)	a b c +	-
	a b c + -	