Mark McKelvy
Data Structures 3:00 MWF
March 25, 2003
P220 1-5 + Boardwork

Infix String: A/B^C+D*E-A*C#		
Char Read	Operator Stack	Postfix String
	#	
A	#	A
/	/#	A
B	/#	AB
^	^/#	AB
C	^/#	ABC
+	+#	ABC^/
D	+#	ABC^/D
*	*+#	ABC^/D
E	*+#	ABC^/DE
-	-#	ABC^/DE*+
A	-#	ABC^/DE*+A
*	*-#	ABC^/DE*+A
C	*-#	ABC^/DE*+AC
#		ABC^/DE*+AC*-#
Infix String: (((A/(B^C))+CD*E))-(A*C))#		
Char Read	Operator Stack	Postfix String
	#	
(	(#	
(	((#	
(	(((#	
A	(((#	A
/	/(((#	A
(	(/(((#	A
B	(/(((#	AB
^	^(/(((#	AB
C	^(/(((#	ABC
)	(/(((#	ABC^
)	(((#	ABC^/
+	+(((#	ABC^/
C	+(((#	ABC^/C
D	+(((#	ABC^/CD
*	*+(((#	ABC^/CD
E	*+(((#	ABC^/CDE
)	((#	ABC^/CDE*+
)	(#	ABC^/CDE*+
-	-(#	ABC^/CDE*+
(	(-(#	ABC^/CDE*+

A	(-(#	ABC^/CDE*+A
*	*(-(#	ABC^/CDE*+A
C	*(-(#	ABC^/CDE*+AC
)	-(#	ABC^/CDE*+AC*
)		ABC^/CDE*+AC*-#

1.A + B * (C – D) / (P – R)

Infix String: A + B * (C – D) / (P – R)#		
Char Read	Operator Stack	Postfix String
	#	
A	#	A
+	+#	A
B	+#	AB
*	*+#	AB
(	(*+#	AB
C	(*+#	ABC
-	-(*+#	ABC
D	-(*+#	ABCD
)	*+#	ABCD-
/	/*+#	ABCD-
(	(/*+#	ABCD-
P	(/*+#	ABCD-P
-	-(/*+#	ABCD-P
R	-(/*+#	ABCD-PR
)	/*+#	ABCD-PR-
#		ABCD-PR-/*+#

2.ABCD-PR-/*+

      (6)(4)(3)(1)-(12)(11)-/*+
      (6)(4)(2) (12)(11)-/*+
      (6)(4)(2) (1)/*+
      (6)(4)(2) *+
      (6)(8) +
      (14)

3.P + ((Q – F) / Y)

Infix String: P + ((Q – F) / Y)#		
Char Read	Operator Stack	Postfix String
	#	
P	#	P
+	+#	P
(	(+#	P
(	((+#	P
Q	((+#	PQ
-	-((+#	PQ
F	-((+#	PQF

)	(+#	PQF-
/	/(+#	PQF-
Y	/(+#	PQF-Y
)	+#	PQF-Y/
#		PQF-Y/+#

4. (10)(18)(4)-(2)/+
    (10)(14)(2)/+
    (10)(7)+
    (17)

5. P*(Q/Y)A-B+D*Y

Infix String: P*(Q/Y)A-B+D*Y#		
Char Read	Operator Stack	Postfix String
	#	
P	#	P
*	*#	P
(	(*#	P
Q	(*#	PQ
/	/(*#	PQ
Y	/(*#	PQY
)	*#	PQY/
+	+*#	PQY/
A	+*#	PQY/A
-	-*#	PQY/A+
B	-*#	PQY/A+B
+	+*#	PQY/A+B-
D	+*#	PQY/A+B-D
*	*#	PQY/A+B-D+*
Y	*#	PQY/A+B-D+*Y
#		PQY/A+B-D+*Y*#