ECE 376: Handout #2

Assembler Instructions

Assume registers W, X, and Y are have initial values of 5, 6, 7 respectively. Determine the contents of each register after each assembler command.

	W	X	Y
; Start	5	6	7
movlw 13			
movf X,W			
movwf Y			
addwf Y,F			
subwf X,W			
btg X,0			
clrf Y			
incf X,F			
incf Y,W			
andlw 0x03			

Solution

	W	X	Y
; Start	5	6	7
movlw 13 *move 13 to W*	13	6	7
movf X,W *move X to W (read)*	6	6	7
movwf Y *move W to Y (write)*	6	6	6
addwf Y,F *Y = Y + W*	6	6	12
subwf X,W *W = X - W*	0	6	12
btg X,0 *toggle bit 0 of X*	0	7	12
clrf Y *clear Y*	0	7	0
incf X,F *incrment X, result goes in X*	0	8	0
incf Y,W *increment y, result goes in Y*	1	8	0
andwf X,F *and W and X, result goes in X*	1	0	0