1.

Command	W	A	B

2.

```
; 8-bit
; unsigned char A, B, C;
; A = B + 2*C + 3;

rlncf C, W   ; C * 2
addwf B, W   ; B + 2*C
addlw 3      ; B + 2*C + 3
movwf A      ; A = B + 2*C + 3
```

3.

```
; 16-bit
; unsigned int A, B, C;
; A = B + 2*C + 3;

movf   C, W
addwf  C, W
movwf  A
movf   C+1, W
addwfc C+1, W
movwf  A+1      ; A = 2*C

movf   A, W
addwf  B, W
```

```
movwf  A
movf   A+1, W
addwfc B+1, W
movwf  A+1      ; A = B + 2*C

movf   A, W
addlw  3
movwf  A
movlw  0
addwfc A+1, F   ; A = B + 2*C + 3
```

4.

```
; unsigned char A, B, C;
; if(A > B) C += 1
; if(A < B) C -= 1

movf   B, W
cpfsgt A
bra    2
incf   C, F
cpfslt A
bra    2
decf   C, F
```

5.

```
; Start

movlw 0xFF
movwf TRISB
clrf  TRISC
clrf  PORTC

Loop1:
  btfss PORTB,0
  goto  Loop1
  btfss PORTB, 1
  goto  K
  btfss PORTB, 2
  goto  J
Loop2:
  btfsc PORTB,0
  goto  Loop2
```

```
  goto  Loop1
K:
  btfss PORTB, 2
  goto  JK
  clrf  PORTC
  goto  Loop2
J:
  movlw 0xFF
  movwf PORTC
  goto  Loop2
JK:
  movf  PORTC, W
  bz    3
  clrf  PORTC
  goto  Loop2
  movlw 0xFF
  movwf PORTC
  goto  Loop2
```

6.

```
movlw 0xFF
movwf TRISB
clrf  TRISC
clrf  PORTC

Loop1:
  movf  PORTB
  bnz   2
  goto  Loop1
Loop2:
  btfsc PORTB, 0
  goto  Six
  btfsc PORTB, 1
  goto  Eight
Sixteen:
  incf  PORTC, F  ; Increment
  movf  PORTC, W  ; Mod 16
  sublw 16
  bn    2
  goto Loop1      ; Less than 16
  movlw 16        ; More than 16
  subwf PORTC, F
  goto Loop1
Six:
```

```
   incf  PORTC, F  ; Increment
   movf  PORTC, W  ; Mod 6
   sublw 6
   bn    2
   goto Loop1      ; Less than 6
   movlw 6         ; More than 6
   subwf PORTC, F
   goto Loop1
 Eight:
   incf  PORTC, F  ; Increment
   movf  PORTC, W  ; Mod 8
   sublw 8
   bn    2
   goto Loop1      ; Less than 8
   movlw 8         ; More than 8
   subwf PORTC, F
   goto Loop1
```