

COAL Homework

Q1) $2^{30} = 1073741824$
 $= 1024 \text{ mb}$

Q2) offset $= 0125 + 00E9$
 $= 020E$
 Near Jump

Q3)

xor ah, ah	CF	PF	ZF
mov al, 0x4A	0	1	1
sub ah, al	0	1	1
	1	0	0

Q4) label 1:
 mov al, [cs: label 1 +]

Q5) [org 0x0100]

mov ax, [num1]
 mov bx, [num2]
 cmp ax, bx
 je terminate

terminate:

mov ax, 0x4C0D
 int 0x21

num1: dw 3, 3

Q6) [org 0x0100]

jmp start

array: dw 1, 3, 3, 5, 6, 8, 8, 9, 11, 13

sum: dw 0

swap: dw 0

Start :

```
mov byte [swap], 0  
mov bx, 0
```

loop 1:

```
mov ax, [array + bx]  
cmp bx, [array + bx + 2]  
je swap  
add bx, 2  
cmp bx, 22  
jne loop 1  
mov bx, 0  
jmp addNum
```

Swap :

```
mov cx, [array + bx + 2]  
mov [array + bx + 2], ax  
mov [array + bx], cx  
mov byte [swap], 1  
add bx, 2  
jmp loop 1
```

addNum :

```
mov ax, [array + bx]  
cmp ax, [array + bx + 2]  
je loop 2  
add [sum], ax
```

Skip :

```
add bx, 2  
cmp bx, 22  
je terminate  
jmp addNum
```

terminate:

```
mov ax, 0x4C00  
int 0x21.
```