

## ② Principios del diseño de hardware

- I "La simplicidad favorece la regularidad"
- II "Entre mas pequeño mas rapido"
- III "Hacer el caso comun mas rapido"
- IV

## ③ Convertir a instrucciones de bajo nivel

```
int x=0;
int y=8;
int z=1;
```

```
Add %r0, 0, %L0
Add %r0, 8, %L1
Add %r0, 1, %L2
```

```
%L1 %L0
y = x + 3
%L3 %L2
z = z + 3
x = (x - z) + (3 + y)
```

```
Add %L0, 3, %L1
Add %L2, 3, %L2
Sub %L0, %L2, %L0
Add %L1, 3, %L1
Add %L1, %L0, %L1
```

## ④ Usar ld y st

```
a[4] = a[2] + x
```

```
Ld [%L0 + (2 * 4)] %L1
Add %L1, %L2, %L2
St %L3 [%L2 + (4 * 4)]
```

```
y[0] = y[40] + L3
```

```
Ld [%L0 + (40 * 4)] %L1
Add %L1, L3, %L1
St %L2 [%L1 + (0 * 4)]
```

## ⑤

```
int i=3;
int p=2;
return i+3;
```

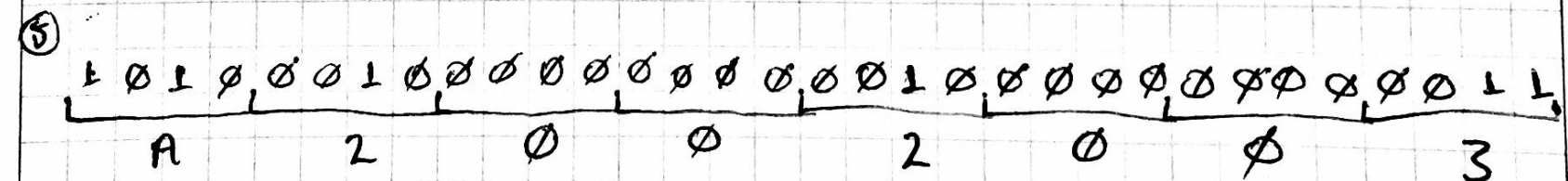
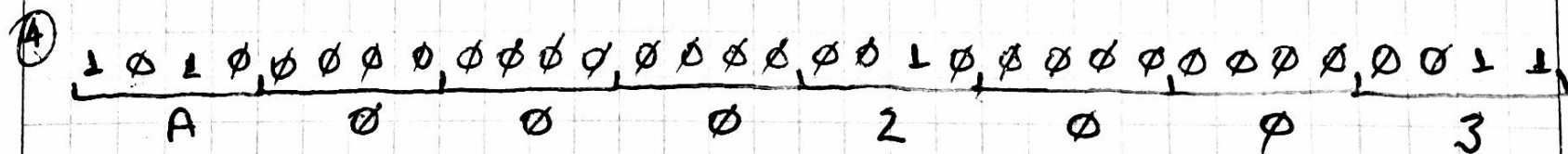
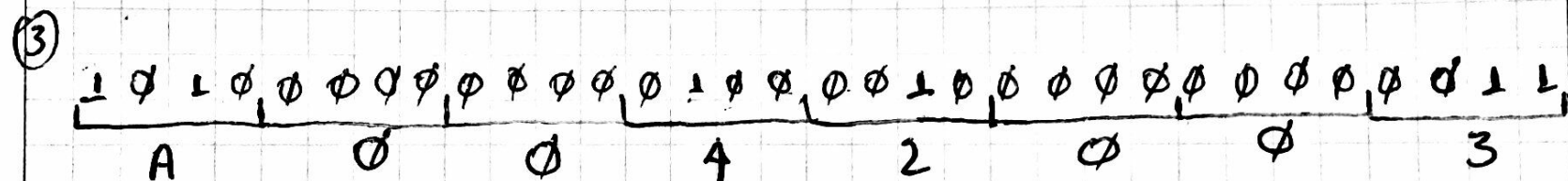
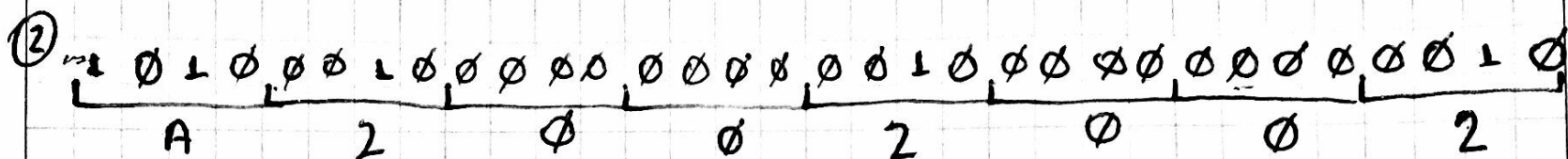
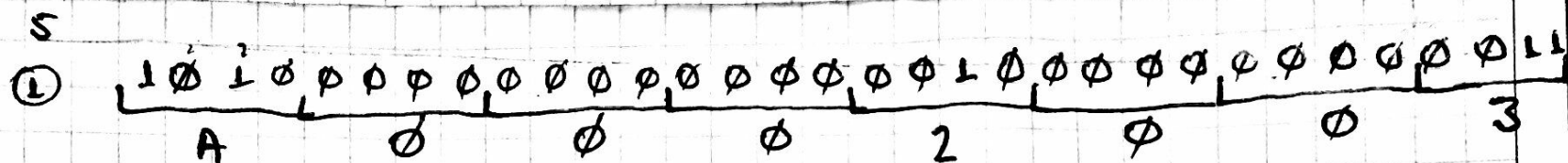
```
Add r0, 3, %L0 ①
Add r0, 2, %L1 ②
Add L0, 3, %L0 ③
```

```
int p=3;
int x=1;
int z=4;
int w=0;
w = (p+40) + (x-z);
return 0
```

```
Add r0, 3, %L0 ④
Add r0, 1, %L1 ⑤
Add r0, 4, %L2 ⑥
Add r0, 0, %L3 ⑦
Add %L0, 40, %L0
Add %L1, %L2, %L1
Add %L0, %L1, %L3
```

b.  $n = -12$   
 $a = -11$   
 $b = -14$

OR  $\% g\phi, -12, \% L\phi$   
OR  $\% g\phi, -11, \% L1$   
OR  $\% g\phi, -14, \% L2$



OP3

Oh

$\emptyset \emptyset \emptyset \emptyset 1\emptyset$