```
# COMP9315 14s2 ... Q2

(a)

id = 4 bytes
name = 25 bytes
colour = 10 bytes
padding of 1 byte
cost = 4 bytes
barcode = 13 bytes
padding of 3 bytes
released = 4 bytes

Size = 4+25+10+1+4+13+3+4 = 64   (or 60 if no padding)

(b)

4096 = bits + tuples
     = ceil(N/8) + N*64

if no bits, N = 64   (4096=64^2)
so, if N=64 can't store bits

sacrifice on tuple slot for bit string

63*64 + ceil(63/8) = 63*64 + 8 = 4040

N = 63                            (or 68 if no padding in (a))

(c)

real N  = L*N = 0.9*63 = 57

# pages = ceil(r/realN)
        = ceil(ceil(10000/57))
        = 176                     (or 164 if no padding in (a))

also ok = ceil(r/(L*N))
        = ceil(10000/(63*0.9))
        = 177

(d)

L = r/Capacity

Capacity = 100*63 = 6300

L = 10000/6300 = 1.59 (159%)   (or 147/148 if no padding in (a))
```