3) R[0], R[1], R[2] ... R[m-1]

m = s + 16

read(g, h, d), write(g, h, d)

a) Selection sort sedo code (i) (i, j, k, n).

s always divides (i)

```
for i=n downto 2 do
    if i≤s then read (1,1,i)          k ← 1
    for j=2 to i do
     if A[j] > A[k] then A[j] ⇔ A[k]
     end if
    end for ⇐ A[k] ⇔ A[i]
    write (1,1,i)
    else
        R[0] ⇐ R[min(s,i)]
        r ⇐ min(s,i)
        while r+s < i do
            read (1,r,s)
            for j=0 to s-1 do
                if R[j] > R[j+1]
            end if
            end for
            write (r,0,s)
            j[0] ⇐ R[s]
            r ⇐ r+s
        end while
    read (r,1,i-r)
    for j=0, to i-r do
      if R[j] > R[j+1]
```

then $R[j] \leftrightarrow R[j+1]$
end if
end for
write $(r, 0, i-r)$
end if
end for

b) case of memory $f(n)=3$ ~~co exchange~~

$n >> s$

$\alpha\ \beta,\ s,\ n$

$$\sum_{i=2}^{n} \sum_{k=1}^{i/s} \beta s = \beta \sum_{i=2}^{n} s \sum_{k=1}^{i/s} 1 = \beta \sum_{i=2}^{n} s i/s = \beta \sum_{i=2}^{n} i = \frac{\beta n^2}{2}$$

when $f(n)=3$

$$\sum_{i=2}^{n} \sum_{k=3}^{i/s} \alpha = \alpha \sum_{i=2}^{n} \sum_{k=3}^{i/s} 1 = \alpha \sum_{i=2}^{n} i/3s = \alpha/3s \sum_{2}^{n} i$$

$$= \frac{\alpha n^2}{6s}$$

when $f(n)=n$

$$\sum_{i=2}^{n} \sum_{k=1}^{i/s} \alpha k s = \alpha \sum_{i=2}^{n} s \sum_{k=1}^{i/s} k = \alpha \sum_{i=2}^{n} s \frac{i^2}{2s^2} = \frac{\alpha}{2s} \sum_{i=2}^{n} i^2$$

$$= \frac{\alpha n^3}{6s}$$

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