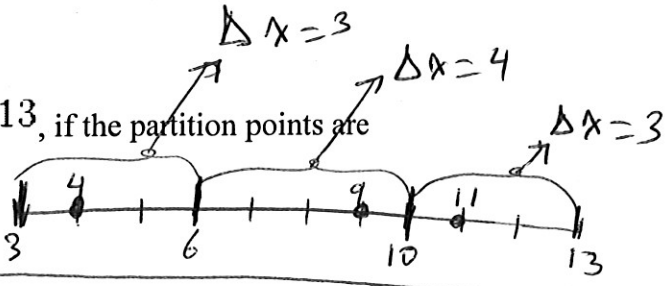
Webwork Sec 5.2 #2
Book Problem 5

(a) Find the Riemann sum for $f(x) = x^3, 3 \le x \le 13$, if the partition points are $3, 6, 10, 13$ and the sample points are $4, 9, 11$.

R = [ ]



$R = f(4)\Delta x + f(9)\Delta x + f(11)\Delta x$

$= (4^3)(3) + (9^3)(4) + (11^3)(3)$

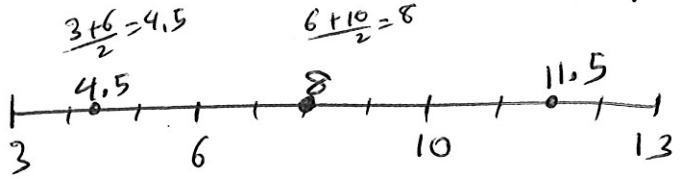
$= 7101$

it means that from the 1st subinterval pick 4 and find $f(4)$.
From the 2nd subinterval choose $x = 9$ and find $f(9)$.
From the 3rd, find $f(11)$

(b) Find the Riemann sum if the partition points are $3, 6, 10, 13$ and the sample points are the midpoints.

M = [ ]

Here from each subinterval we have to choose the midpoint



$M = f(4.5)(3) + f(8)(4) + f(11.5)(3)$

$= (4.5^3)(3) + (8^3)(4) + (11.5^3)(3)$

$= 6884$