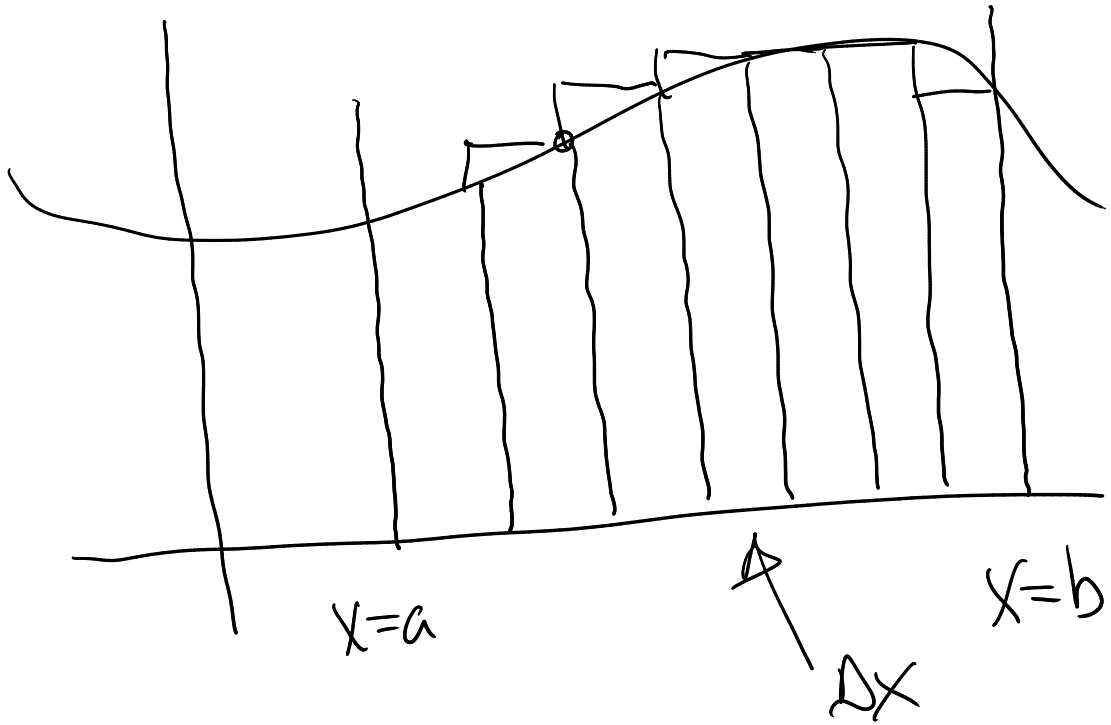
Math 181 Tuesday Jan 19 § 5.1

WW Orientation
Wednite 6PM

Problem: Area under
$y = f(x)$ between $X=a$ & $X=b$

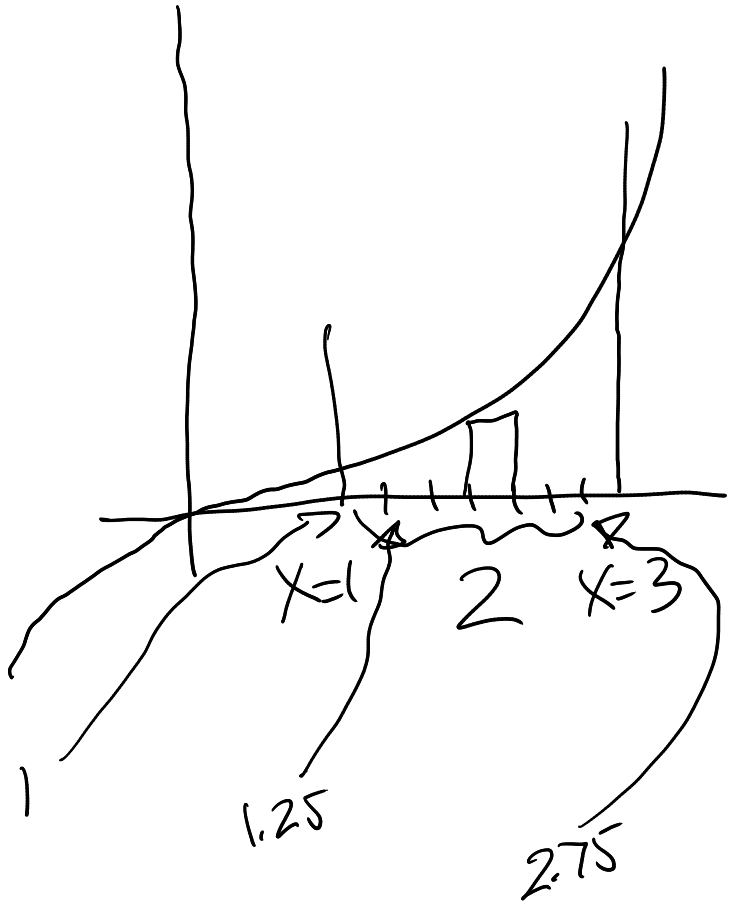
WW 5.1
Thu 6AM
WW 5.2 Preview
Thu 6AM



Sum $\sum f(x)\,\Delta x$ (heights, width)

$\int f(x)\,dx$

Ex Area under $f(x) = x^3$ for $1 \le x \le 3$.



$n = 8$ rectangles, left-hand endpoints

$\Delta x = \frac{3-1}{8} = 1/4$

x	$f(x)$
1	$1^3 = 1$
1.25	$(1.25)^3 = 1.95$
1.5	$(1.5)^3 = 3.375$
1.75	
2	
2.25	
2.5	
2.75	$(2.75)^3 = 20.797$

$L_8 = 1(1/4) + 1.95(1/4) + 3.375(1/4) + \cdots + 20.797(1/4)$

$= 16.875$

$R_8 = 23.375$

M_8