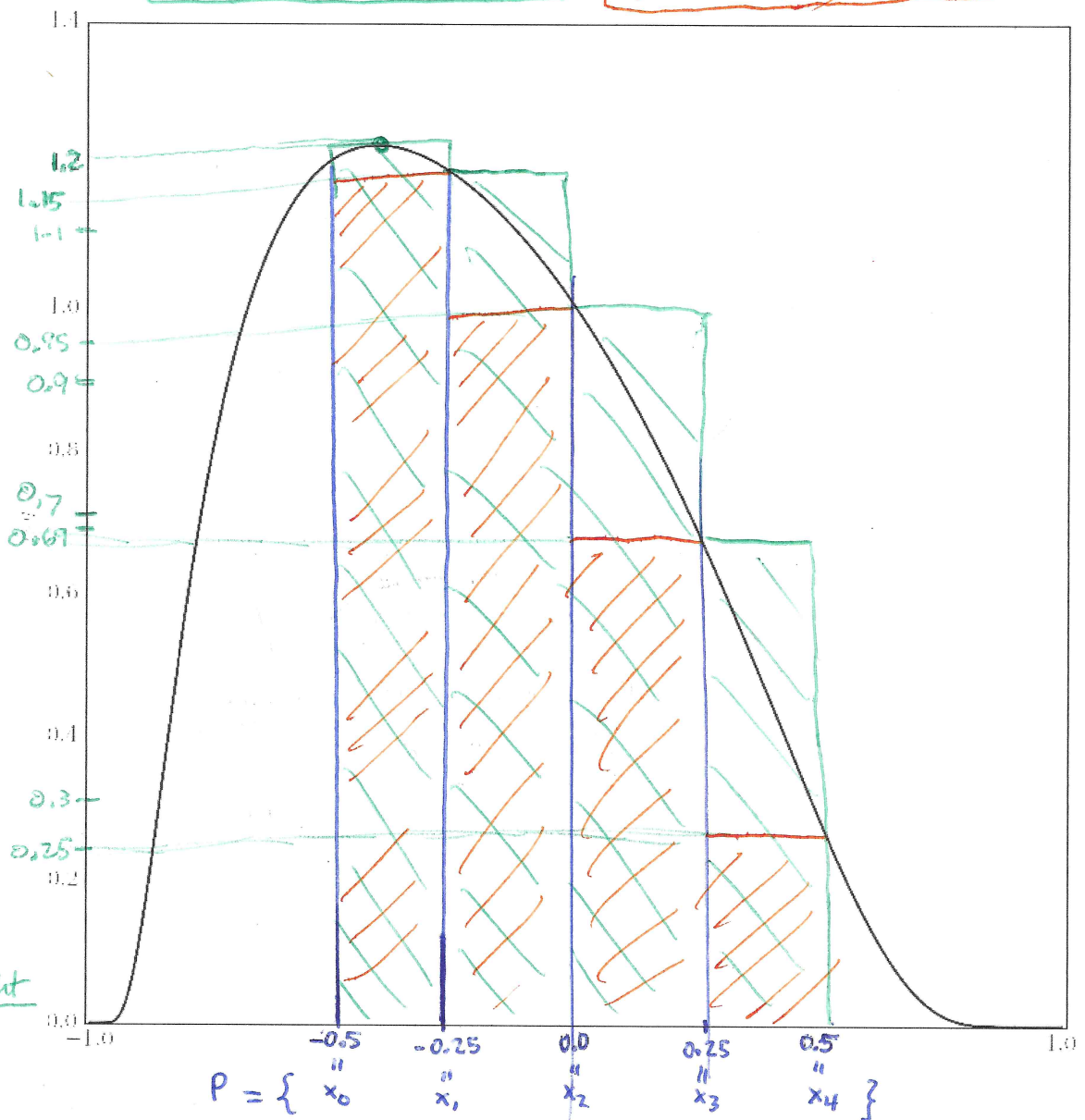


2. Estimate the value of  $\int_{-0.5}^{0.5} \phi(x) dx$  using the Darboux approach with a partition  $P$  containing 5 points. Compute both  $U$  and  $L$  to estimate (draw and label everything involved). The picture of the function appears again for your convenience:

compute  $U$  w/ green

compute  $L$  w/ red

orange?



upper sum

Rectangle	Width	Height
1	0.25	1.2
2	0.25	1.15
3	0.25	0.95
4	0.25	0.69

$$U(f, P) = (0.25)(1.2) + (0.25)(1.15) + (0.25)(0.95) + (0.25)(0.69) = 0.9975$$

Lower Sum

2

Rectangle	Width	Height
1	0.25	1.15
2	0.25	0.95
3	0.25	0.69
4	0.25	0.25

$$\Rightarrow L(f, P)$$

$$0.25(1.15 + 0.95 + 0.69 + 0.25)$$

$$= 0.76$$