

## MATH 10250 Homework 5

1. Show that if  $f(x)$  is integrable on interval  $[a, b]$  and  $a \leq c \leq b$ , then

$$\int_a^b f(x) \, dx = \int_a^c f(x) \, dx + \int_c^b f(x) \, dx.$$

Using a picture to explain is fine.

2. Show that if  $f(x)$  is negative and integrable on  $[a, b]$ , then the integral

$$\int_a^b f(x) \, dx$$

is negative.