

Written homework #1

Please show all your work. Submit on September 9 in class.

Problem 1

(a) Find the value of the following definite integral (a and b are some constants, and $b > a$):

$$\int_{\frac{a+b}{2}}^b (-2x + a + b) \sqrt{-(x-a)(x-b)} dx =$$

(b) Suppose $b = 3$. Using the result from part (a) find out for which values of a the integral in the part (a) is less or equal to $-\frac{2}{3}$?