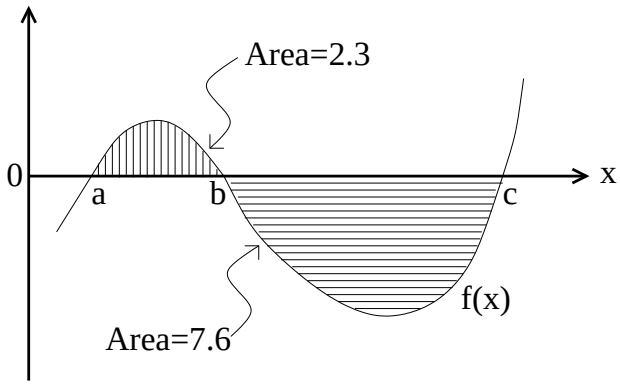
**6.** (8 points) Use the figure below to calculate the numerical values of the definite integrals in parts (a) through (d). You need not show your reasoning.




(**a**) $\displaystyle\int_a^b f(x)\,dx =$ _____

(**b**) $\displaystyle\int_b^c f(x)\,dx =$ _____

(**c**) $\displaystyle\int_a^c f(x)\,dx =$ _____

(**d**) $\displaystyle\int_b^a f(x)\,dx =$ _____

**7.** (8 points) An isosceles triangle has a base of length 8 meters. If $\theta$ denotes the angle opposite one of the two equal sides, and if $\theta$ is increasing at a constant rate of of 0.1 radians per second, how fast is the area of the triangle increasing when $\theta = \pi/6$?