

Section 6.1: Area Between Curves

- (1) In this section, we use integration to find the area of regions bounded by curves. Explain, in terms of adding up the area of rectangles, how this works.

- (2) Explain how it works in terms of thinking about the area under the first curve minus the area under the second.

- (3) When finding the area between two curves, does the area below the x-axis count as negative? Explain your reasoning.

(4) When we integrate with respect to x , which curve is first (which to we subtract from)?
What about when we integrate with respect to y ?

(5) Sketch examples of regions bounded by curves that satisfy each of the following:

(a) Area can only be found with one integral by integrating with respect to x .

(b) Area can only be found with one integral by integrating with respect to y .

(c) Area can be found with one integral by integrating with respect to x or y .

(d) We must use two integrals if we integrate with respect to x and at least two if we integrate with respect to y .