

# Accelerated AB Calculus

## 6.00 - Area (Between Functions)

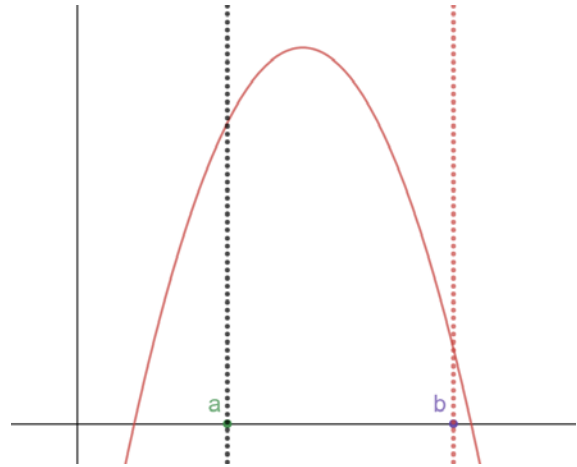
Name \_\_\_\_\_

Directions: Let's take some notes regarding how to obtain the area between two functions.

### Area Revisited

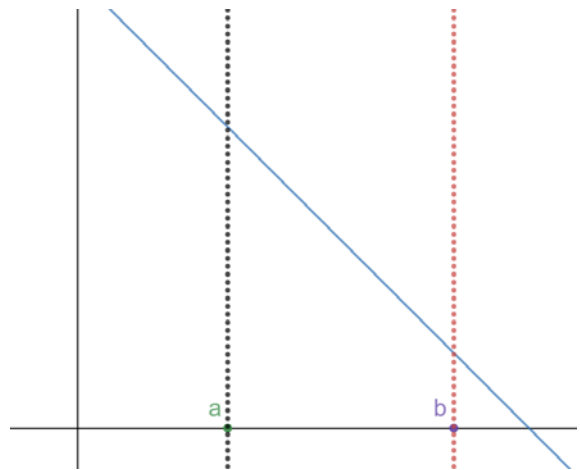
A) The function  $f(x)$  is graphed here.

Sketch the area represented by  $\int_a^b f(x) dx$ .

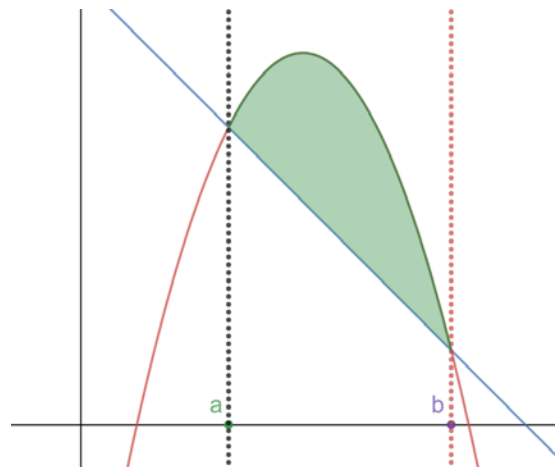


B) The function  $g(x)$  is graphed here.

Sketch the area represented by  $\int_a^b g(x) dx$ .



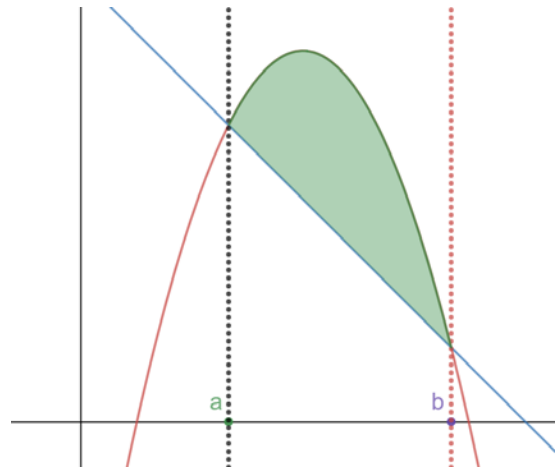
C) Use the visual aids above in parts (A) and (B) to help you write a single integral expression that would yield the following shaded area.



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- D) Suppose  $f(x) = -(x-3)^2 + 5$  and  $g(x) = -(x-2) + 4$ . Find the x-coordinates for the points of intersection of these two functions.



- E) Evaluate the integral expression you set-up in part (C), using your answer to part (D) to determine your limits of integration.

- F) Check your answer by evaluating the definite integral on your TI calculator or desmos!