

Names: _____ Period: _____ AP Calculus

Matching Activity for Definite Integrals: Area Under a Curve

Activity Instructions:

Each “graph” card shows function that has a gray shaded area under the curve. Match each graph with the definite integral that best represents the gray shaded area. Using a calculator or by hand, find the shaded area on each graph. The areas are rounded to the nearest thousandth when necessary.

How to fill out the chart below:

For each graph, write the LETTER on the definite integral card that best represents the shaded area. Then write the LETTER of the card that has the correct numeric value for the shaded area.

Graph	Integral Card	Area Card
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Answer Key & Notes for the Teacher**AP Calculus****Matching Activity for Definite Integrals: Area Under a Curve****Activity Instructions:**

This matching activity is designed as a replacement for a more traditional in-class problem set after students have learned the concepts of the definite integral and its relationship to finding the area under a curve. If students know how to find integrals using the TI-89 graphing calculator (or another calculator with a CAS), this activity will go more quickly than if students are calculating the values of the definite integrals by hand. If students are working with the TI-89, they can complete this activity before being introduced to many anti-derivative units. If the areas are computed without a calculator, this activity would work best later in the unit since students must know how to find antiderivatives of trigonometric functions and exponential functions.

This activity is designed for pairs of students (or groups of 3 students) to complete together. Each group only requires one set of cards copied onto colored paper or cardstock and one answer sheet handout.

Each “graph” card shows function that has a gray shaded area under the curve. Match each graph with the definite integral that best represents the gray shaded area. Using a calculator or by hand, find the shaded area on each graph. The areas are rounded to the nearest thousandth when necessary.

How to fill out the chart below:

For each graph, write the LETTER on the definite integral card that best represents the shaded area. Then write the LETTER of the card that has the correct numeric value for the shaded area.

Graph	Integral Card	Area Card
1	A	b
2	E	j
3	C	h
4	G	i
5	B	e
6	I	f
7	D	a
8	J	g
9	F	c
10	H	d