Calculus BC Schedule--Chapter 7 Applications of Definite Integrals

Date	Lesson	HW Assignment
18-Jan	**NO SCHOOL - M.L. King, Jr B-day**	**NO Additional Homework**
19-Jan	7.2 Area Between Curves	**HW2**--p.395 #3,5,10,13,17, #7,14 (w/calculator)
20-Jan	7.2 Area Between Curves	**HW3**--p.396 #25,28,39, Video on Area of Polar Functions
21-Jan	10.3 Polar Functions	**HW4**--p.557 #43,47,45,49,63,66
22-Jan	10.3 Polar Functions	**HW5**--p.557 #51,53,55,61,64
25-Jan	*Check & Connect Day*	**AP Review Practice Problems**
26-Jan	10.3 Polar Functions	**HW6**--Video on Volume Using Cross Sections
27-Jan	7.3 Volume	**HW7**--p.406 #4,39b,42, Video on Volume Using Disk Method
28-Jan	7.3 Volume	**HW8**--p.407 #7,11,14, Video on Volume Using Washer Method
29-Jan	7.3 Volume	**HW9**--p.407 #16,18,29ad,45a
1-Feb	*Check & Connect Day*	**AP Review Practice Problems**
2-Feb	7.3 Volume	**HW10**--p.407 #21,22,65,66,67, Video on Lengths of Curves
3-Feb	7.4 Lengths of Curves	**HW11**--p.416 #1ac,4ac,6ac,7ac,35, Video on Lengths w/Parametric or Vectors
4-Feb	10.1 Parametric Functions, 10.2 Vectors in the Plane	**HW12**--p.535 #27,31, p.545 #37b,39b,48
5-Feb	Chapter 7 Review **Quick M/C Quiz for Unit 7**	**HW13**--p.431 #7,9,15, #13,53 (w/calculator),21bd,25,27,28, p.560 #35,37,49ab
8-Feb	**1/2 Day SCHOOL** - *PLT Planning Day*	
9-Feb	Chapter 7 Review	**Study for Test**
10-Feb	**Chapter 7 Test**	**NO Additional Homework**
11-Feb	AP Activity: Chapters 6 & 7	AP Activity: Chapters 6 & 7 Due 2/18 **HW1**--Video on L'Hôpital's Rule

Calculus BC Schedule--Chapter 7 Applications of Definite Integrals

Unit 7: Applications of Definite Integrals

CHA-5
Definite integrals allow us to solve problems involving the accumulation of change in area or volume over an interval.

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
CHA-5.A Calculate areas in the plane using the definite integral.	**CHA-5.A.1** Areas of regions in the plane can be calculated with definite integrals.
CHA-5.A Calculate areas in the plane using the definite integral.	**CHA-5.A.2** Areas of regions in the plane can be calculated using functions of either x or y.
CHA-5.A Calculate areas in the plane using the definite integral.	**CHA-5.A.3** Areas of certain regions in the plane may be calculated using a sum of two or more definite integrals or by evaluating a definite integral of the absolute value of the difference of two functions.
CHA-5.B Calculate volumes of solids with known cross sections using definite integrals.	**CHA-5.B.1** Volumes of solids with square and rectangular cross sections can be found using definite integrals and the area formulas for these shapes.
CHA-5.B Calculate volumes of solids with known cross sections using definite integrals.	**CHA-5.B.2** Volumes of solids with triangular cross sections can be found using definite integrals and the area formulas for these shapes.
	CHA-5.B.3 Volumes of solids with semicircular and other geometrically defined cross sections can be found using definite integrals and the area formulas for these shapes.

CHA-5.C Calculate volumes of solids of revolution using definite integrals.	**CHA-5.C.1** Volumes of solids of revolution around the x- or y-axis may be found by using definite integrals with the disc method.
CHA-5.C Calculate volumes of solids of revolution using definite integrals.	**CHA-5.C.2** Volumes of solids of revolution around any horizontal or vertical line in the plane may be found by using definite integrals with the disc method.
CHA-5.C Calculate volumes of solids of revolution using definite integrals.	**CHA-5.C.3** Volumes of solids of revolution around the x- or y-axis whose cross sections are ring shaped may be found using definite integrals with the washer method.
CHA-5.C Calculate volumes of solids of revolution using definite integrals.	**CHA-5.C.4** Volumes of solids of revolution around any horizontal or vertical line whose cross sections are ring shaped may be found using definite integrals with the washer method.
CHA-5.D Calculate areas of regions defined by polar curves using definite integrals. **BC ONLY**	**CHA-5.D.1** The concept of calculating areas in rectangular coordinates can be extended to polar coordinates. **BC ONLY**
CHA-5.D Calculate areas of regions defined by polar curves using definite integrals. **BC ONLY**	**CHA-5.D.2** Areas of regions bounded by polar curves can be calculated with definite integrals. **BC ONLY**

CHA-6
Definite integrals allow us to solve problems involving the accumulation of change in length over an interval.

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
CHA-6.A Determine the length of a curve in the plane defined by a function, using a definite integral. **BC ONLY**	**CHA-6.A.1** The length of a planar curve defined by a function can be calculated using a definite integral. **BC ONLY**
CHA-6.B Determine the length of a curve in the plane defined by parametric functions, using a definite integral. **BC ONLY**	**CHA-6.B.1** The length of a parametrically defined curve can be calculated using a definite integral. **BC ONLY**

FUN-8
Solving an initial value problem allows us to determine an expression for the position of a particle moving in the plane.

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
FUN-8.B Determine values for positions and rates of change in problems involving planar motion. **BC ONLY**	**FUN-8.B.1** Derivatives can be used to determine velocity, speed, and acceleration for a particle moving along a curve in the plane defined using parametric or vector-valued functions. **BC ONLY**
	FUN-8.B.2 For a particle in planar motion over an interval of time, the definite integral of the velocity vector represents the particle's displacement (net change in position) over the interval of time, from which we might determine its position. The definite integral of speed represents the particle's total distance traveled over the interval of time. **BC ONLY**