

Calculus BC Schedule-- Unit 7 Applications of the Definite Integral

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 17	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan
Lesson	Go Over Final Exam/AP Practice Exam	8.1 Area Between Graphs	EARLY DISMISSAL 8.1 Area Between Graphs	9.4 Area in Polar Coordinates	9.4 Area in Polar Coordinates
HMWK	HW1 --Videos Area Btn Curves, p.579 #5,8,11	HW2 --p.579 #13,15,50,51, AP Practice #2,5,9 (check all answers in calculator)	HW3 --p.579 #21,23, AP Practice #3,10, Calculator #58c,59c	HW4 --p.673 #1,3,5,7,9,21, AP Practice #1,3 <i>January IML Math Contest after school?</i>	HW5 --Calculator p.673 #23,25,33,37, AP Practice #2,4,5
Week 18	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan
Lesson	8.4 Volume of a Solid: Slicing	8.2 Volume of a Solid: Disks & Washers	EARLY DISMISSAL 8.2 Volume of a Solid: Disks & Washers	8.2 Volume of a Solid: Disks & Washers Quiz 8.1 & 9.4	8.2 Volume of a Solid: Disks & Washers
HMWK	HW6 --p.610 #7,8, AP Practice #2,5,8ad	HW7 --p.593 #1,5,7,23,38,41 AP Practice #1,2	HW8 --p.593 #10,17,33,39,42 Study for Quiz 8.1 & 9.4	HW9 --p.593 #34,50abc, AP Practice #4,9, Calculator #43,53	HW10 --p.593 #9,13,35,40,63, p.610 AP Practice #1, Calculator p.593 #46
Week 19	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan
Lesson	NO SCHOOL -- M.L. King, Jr B-day	8.5 Arc Length	EARLY DISMISSAL 9.2 Arc Length / Lengths of Curves 9.5 Vectors / Arc Length	9.5 Vectors / Arc Length 9.7 Integrals of Vectors	<i>Unit 7 Review (Book Chapter 8)</i>
HMWK	No Additional Homework	HW11 --p.618 #1,11,13, AP Practice #1,2, Calculator #29,30,35	HW12 --p.658 #5,33,37, AP Practice #5, Calculator #41ab,43ab, p.681 #67,69,71	HW13 --p.696 AP Practice #1,5, Calculator p.660 #51,55, p.681 #75,79b, AP Practice #4	HW14 --p.632 #1,5,6,8, AP Practice #1,2,7,8, p.699 AP Practice #11,19,25d, Calculator p.699 #27,30
Week 20	27-Jan	28-Jan	29-Jan		
Lesson	<i>Unit 7 Review (Book Chapter 8)</i>	Unit 7 TEST (Book Chapter 8)	EARLY DISMISSAL AP Activity: Units 6 & 7 (Book Chapters 7& 8)		
HMWK	STUDY for TEST!!!	No Additional Homework	<i>AP Activity: Units 6 & 7 Due Feb 5</i>		

Calculus BC Schedule-- Unit 7 Applications of the Definite Integral

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

CHA-5.A

Calculate areas in the plane using the definite integral.

CHA-5.A

Calculate areas in the plane using the definite integral.

CHA-5.A

Calculate areas in the plane using the definite integral.

CHA-5.B

Calculate volumes of solids with known cross sections using definite integrals.

CHA-5.B

Calculate volumes of solids with known cross sections using definite integrals.

ESSENTIAL KNOWLEDGE

CHA-5.A.1

Areas of regions in the plane can be calculated with definite integrals.

CHA-5.A.2

Areas of regions in the plane can be calculated using functions of either x or y .

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.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.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.

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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.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.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.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

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.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

CHA-6.A

Determine the length of a curve in the plane defined by a function, 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

ESSENTIAL KNOWLEDGE

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.1

The length of a parametrically defined curve can be calculated using a definite integral.

BC ONLY

LEARNING OBJECTIVE

FUN-8

Determine values for positions and rates of change in problems involving planar motion. **BC ONLY**

ESSENTIAL KNOWLEDGE

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**

FUN-8

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