

# AP Calculus BC

Past-Paper Exercise Sheets — Question Index  
74 subtopics • 310 questions

## 1.15 Connecting Limits at Infinity and Horizontal Asymptotes

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2025   | 1 | calculation |

## 1.16 Working with the Intermediate Value Theorem (IVT)

*5 questions • calculation x4, data response*

| Source | Q | Type          |
|--------|---|---------------|
| 2026   | 1 | calculation   |
| 2025   | 3 | data response |
| 2022   | 4 | calculation   |
| 2016   | 1 | calculation   |
| 2014   | 4 | calculation   |

## 2.1 Defining Average and Instantaneous Rates of Change at a Point

*7 questions • calculation x7*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 1 | calculation |
| 2026   | 3 | calculation |
| 2025   | 1 | calculation |
| 2024   | 1 | calculation |
| 2022   | 4 | calculation |
| 2014   | 1 | calculation |
| 2014   | 4 | calculation |

## 2.3 Estimating Derivatives of a Function at a Point

*8 questions • calculation x7, data response*

| Source | Q | Type          |
|--------|---|---------------|
| 2026   | 1 | calculation   |
| 2025   | 3 | data response |
| 2024   | 1 | calculation   |
| 2022   | 4 | calculation   |
| 2021   | 1 | calculation   |
| 2018   | 4 | calculation   |
| 2016   | 1 | calculation   |
| 2015   | 3 | calculation   |

## 2.4 Connecting Differentiability and Continuity: Determining When Derivatives Do and Do Not Exist

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2017   | 3 | calculation |

## 2.6 Derivative Rules: Constant, Sum, Difference, and Constant Multiple

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 4 | calculation |

## 2.7 Derivatives of $\cos x$ , $\sin x$ , $e^x$ , and $\ln x$

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 4 | calculation |

## 2.8 The Product Rule

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2021   | 4 | calculation |

## 2.9 The Quotient Rule

*3 questions • calculation x3*

| Source | Q | Type        |
|--------|---|-------------|
| 2019   | 5 | calculation |
| 2017   | 5 | calculation |
| 2014   | 3 | calculation |

### 3.1 The Chain Rule

*2 questions • calculation x2*

| Source | Q | Type        |
|--------|---|-------------|
| 2023   | 1 | calculation |
| 2014   | 3 | calculation |

### 3.2 Implicit Differentiation

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2025   | 5 | calculation |

### 3.6 Calculating Higher-Order Derivatives

*4 questions • calculation x4*

| Source | Q | Type        |
|--------|---|-------------|
| 2025   | 5 | calculation |
| 2023   | 6 | calculation |
| 2017   | 3 | calculation |
| 2016   | 4 | calculation |

### 4.1 Interpreting the Meaning of the Derivative in Context

*6 questions • calculation x6*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 3 | calculation |
| 2023   | 1 | calculation |
| 2019   | 5 | calculation |
| 2018   | 2 | calculation |
| 2018   | 4 | calculation |
| 2014   | 1 | calculation |

## 4.2 Straight-Line Motion: Connecting Position, Velocity, and Acceleration

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2015   | 3 | calculation |

## 4.4 Introduction to Related Rates

*2 questions • calculation x2*

| Source | Q | Type        |
|--------|---|-------------|
| 2022   | 4 | calculation |
| 2018   | 4 | calculation |

## 4.5 Solving Related Rates Problems

*9 questions • calculation x9*

| Source | Q | Type        |
|--------|---|-------------|
| 2025   | 2 | calculation |
| 2022   | 4 | calculation |
| 2019   | 4 | calculation |
| 2018   | 4 | calculation |
| 2018   | 5 | calculation |
| 2017   | 1 | calculation |
| 2016   | 5 | calculation |
| 2014   | 2 | calculation |
| 2014   | 4 | calculation |

## 4.6 Approximating Values of a Function Using Local Linearity and Linearization

*5 questions • calculation x5*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 3 | calculation |
| 2023   | 3 | calculation |
| 2017   | 4 | calculation |
| 2015   | 5 | calculation |
| 2014   | 1 | calculation |

## 4.7 Using L'Hospital's Rule for Determining Limits of Indeterminate Forms

*4 questions • calculation x4*

| Source | Q | Type        |
|--------|---|-------------|
| 2023   | 4 | calculation |
| 2021   | 4 | calculation |
| 2019   | 3 | calculation |
| 2016   | 4 | calculation |

## 5.1 Using the Mean Value Theorem

*3 questions • calculation x3*

| Source | Q | Type        |
|--------|---|-------------|
| 2023   | 1 | calculation |
| 2021   | 4 | calculation |
| 2018   | 4 | calculation |

## 5.2 Extreme Value Theorem, Global Versus Local Extrema, and Critical Points

*5 questions • calculation x5*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 2 | calculation |
| 2024   | 4 | calculation |
| 2021   | 3 | calculation |
| 2017   | 5 | calculation |
| 2015   | 5 | calculation |

## 5.3 Determining Intervals on Which a Function Is Increasing or Decreasing

*7 questions • calculation x7*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 4 | calculation |
| 2022   | 1 | calculation |
| 2022   | 3 | calculation |
| 2017   | 2 | calculation |
| 2017   | 3 | calculation |
| 2016   | 1 | calculation |
| 2014   | 3 | calculation |

## 5.4 Using the First Derivative Test to Determine Relative (Local) Extrema

*8 questions • calculation x8*

| Source | Q | Type        |
|--------|---|-------------|
| 2024   | 3 | calculation |
| 2023   | 4 | calculation |
| 2022   | 1 | calculation |
| 2017   | 5 | calculation |
| 2016   | 3 | calculation |
| 2016   | 4 | calculation |
| 2015   | 4 | calculation |
| 2015   | 5 | calculation |

## 5.5 Using the Candidates Test to Determine Absolute (Global) Extrema

*11 questions • calculation x11*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 4 | calculation |
| 2025   | 1 | calculation |
| 2025   | 4 | calculation |
| 2023   | 4 | calculation |
| 2022   | 3 | calculation |
| 2019   | 1 | calculation |
| 2019   | 3 | calculation |
| 2018   | 1 | calculation |
| 2017   | 3 | calculation |
| 2016   | 3 | calculation |
| 2015   | 1 | calculation |

## 5.6 Determining Concavity of Functions over Their Domains

*12 questions • calculation x12*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 3 | calculation |
| 2026   | 4 | calculation |
| 2025   | 4 | calculation |
| 2024   | 1 | calculation |
| 2023   | 3 | calculation |
| 2023   | 4 | calculation |
| 2022   | 3 | calculation |
| 2021   | 4 | calculation |
| 2019   | 1 | calculation |
| 2019   | 4 | calculation |
| 2018   | 3 | calculation |
| 2017   | 1 | calculation |

## 5.7 Using the Second Derivative Test to Determine Extrema

*3 questions • calculation x3*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 2 | calculation |
| 2023   | 4 | calculation |
| 2016   | 4 | calculation |

## 5.9 Connecting a Function, Its First Derivative, and Its Second Derivative

*2 questions • calculation x2*

| Source | Q | Type        |
|--------|---|-------------|
| 2018   | 3 | calculation |
| 2016   | 3 | calculation |

## 5.10 Introduction to Optimization Problems

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2025   | 2 | calculation |

## 5.12 Exploring Behaviors of Implicit Relations

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2019   | 4 | calculation |

## 6.1 Exploring Accumulations of Change

*2 questions • calculation x2*

| Source | Q | Type        |
|--------|---|-------------|
| 2022   | 1 | calculation |
| 2018   | 1 | calculation |

## 6.2 Approximating Areas with Riemann Sums

*11 questions • calculation x10, data response*

| Source | Q | Type          |
|--------|---|---------------|
| 2026   | 1 | calculation   |
| 2025   | 3 | data response |
| 2024   | 1 | calculation   |
| 2023   | 1 | calculation   |
| 2022   | 4 | calculation   |
| 2021   | 1 | calculation   |
| 2018   | 4 | calculation   |
| 2017   | 1 | calculation   |
| 2016   | 1 | calculation   |
| 2015   | 3 | calculation   |
| 2014   | 4 | calculation   |

### 6.3 Riemann Sums, Summation Notation, and Definite Integral Notation

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 1 | calculation |

### 6.4 The Fundamental Theorem of Calculus and Accumulation Functions

*11 questions • calculation x11*

| Source | Q | Type        |
|--------|---|-------------|
| 2025   | 1 | calculation |
| 2024   | 4 | calculation |
| 2024   | 5 | calculation |
| 2023   | 2 | calculation |
| 2022   | 1 | calculation |
| 2022   | 3 | calculation |
| 2021   | 4 | calculation |
| 2019   | 3 | calculation |
| 2019   | 6 | calculation |
| 2018   | 1 | calculation |
| 2014   | 3 | calculation |

### 6.5 Interpreting the Behavior of Accumulation Functions Involving Area

*2 questions • calculation x2*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 1 | calculation |
| 2016   | 3 | calculation |

## 6.6 Applying Properties of Definite Integrals

*3 questions • calculation x3*

| Source | Q | Type        |
|--------|---|-------------|
| 2023   | 1 | calculation |
| 2019   | 3 | calculation |
| 2018   | 3 | calculation |

## 6.7 The Fundamental Theorem of Calculus and Definite Integrals

*12 questions • calculation x12*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 1 | calculation |
| 2025   | 4 | calculation |
| 2024   | 1 | calculation |
| 2024   | 2 | calculation |
| 2024   | 4 | calculation |
| 2022   | 3 | calculation |
| 2022   | 5 | calculation |
| 2019   | 3 | calculation |
| 2018   | 3 | calculation |
| 2017   | 1 | calculation |
| 2017   | 3 | calculation |
| 2014   | 3 | calculation |

## 6.8 Finding Antiderivatives and Indefinite Integrals: Basic Rules and Notation

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 5 | calculation |

## 6.11 Integrating Using Integration by Parts

*2 questions • calculation x2*

| Source | Q | Type        |
|--------|---|-------------|
| 2024   | 5 | calculation |
| 2023   | 5 | calculation |

## 6.12 Integrating Using Linear Partial Fractions

*3 questions • calculation x3*

| Source | Q | Type        |
|--------|---|-------------|
| 2019   | 5 | calculation |
| 2017   | 5 | calculation |
| 2015   | 5 | calculation |

## 6.13 Evaluating Improper Integrals

*6 questions • calculation x6*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 5 | calculation |
| 2023   | 5 | calculation |
| 2022   | 5 | calculation |
| 2019   | 5 | calculation |
| 2018   | 2 | calculation |
| 2017   | 5 | calculation |

## 7.2 Verifying Solutions for Differential Equations

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2015   | 4 | calculation |

## 7.3 Sketching Slope Fields

*3 questions • calculation x3*

| Source | Q | Type        |
|--------|---|-------------|
| 2024   | 3 | calculation |
| 2023   | 3 | calculation |
| 2015   | 4 | calculation |

## 7.4 Reasoning Using Slope Fields

*2 questions • calculation x2*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 3 | calculation |
| 2024   | 3 | calculation |

## 7.5 Approximating Solutions Using Euler's Method

4 questions • calculation x4

| Source | Q | Type        |
|--------|---|-------------|
| 2025   | 5 | calculation |
| 2024   | 5 | calculation |
| 2021   | 5 | calculation |
| 2016   | 4 | calculation |

## 7.6 Finding General Solutions Using Separation of Variables

3 questions • calculation x3

| Source | Q | Type        |
|--------|---|-------------|
| 2023   | 3 | calculation |
| 2019   | 4 | calculation |
| 2017   | 4 | calculation |

## 7.7 Finding Particular Solutions Using Initial Conditions and Separation of Variables

6 questions • calculation x6

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 3 | calculation |
| 2024   | 3 | calculation |
| 2023   | 3 | calculation |
| 2021   | 5 | calculation |
| 2019   | 4 | calculation |
| 2017   | 4 | calculation |

## 8.1 Finding the Average Value of a Function on an Interval

12 questions • calculation x12

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 2 | calculation |
| 2025   | 1 | calculation |
| 2024   | 1 | calculation |
| 2023   | 1 | calculation |
| 2022   | 1 | calculation |
| 2021   | 1 | calculation |
| 2019   | 1 | calculation |
| 2019   | 2 | calculation |
| 2018   | 4 | calculation |
| 2017   | 2 | calculation |
| 2016   | 5 | calculation |
| 2015   | 3 | calculation |

## 8.2 Connecting Position, Velocity, and Acceleration of Functions Using Integrals

*2 questions • calculation x2*

| Source | Q | Type        |
|--------|---|-------------|
| 2015   | 3 | calculation |
| 2014   | 4 | calculation |

## 8.3 Using Accumulation Functions and Definite Integrals in Applied Contexts

*7 questions • calculation x6, data response*

| Source | Q | Type          |
|--------|---|---------------|
| 2026   | 1 | calculation   |
| 2025   | 3 | data response |
| 2019   | 1 | calculation   |
| 2018   | 1 | calculation   |
| 2018   | 2 | calculation   |
| 2016   | 1 | calculation   |
| 2015   | 1 | calculation   |

## 8.4 Finding the Area Between Curves Expressed as Functions of x

*3 questions • calculation x3*

| Source | Q | Type        |
|--------|---|-------------|
| 2023   | 5 | calculation |
| 2021   | 3 | calculation |
| 2014   | 5 | calculation |

## 8.7 Volumes with Cross Sections: Squares and Rectangles

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2022   | 5 | calculation |

## 8.9 Volume with Disc Method: Revolving Around the x- or y-Axis

*4 questions • calculation x4*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 5 | calculation |
| 2022   | 5 | calculation |
| 2021   | 3 | calculation |
| 2016   | 5 | calculation |

### 8.11 Volume with Washer Method: Revolving Around the x- or y-Axis

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 5 | calculation |

### 8.12 Volume with Washer Method: Revolving Around Other Axes

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2014   | 5 | calculation |

### 8.13 The Arc Length of a Smooth, Planar Curve and Distance Traveled

*3 questions • calculation x3*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 5 | calculation |
| 2024   | 5 | calculation |
| 2014   | 5 | calculation |

### 9.1 Defining and Differentiating Parametric Equations

*3 questions • calculation x3*

| Source | Q | Type        |
|--------|---|-------------|
| 2023   | 2 | calculation |
| 2022   | 2 | calculation |
| 2016   | 2 | calculation |

### 9.3 Finding Arc Lengths of Curves Given by Parametric Equations

*5 questions • calculation x5*

| Source | Q | Type        |
|--------|---|-------------|
| 2024   | 2 | calculation |
| 2023   | 2 | calculation |
| 2022   | 2 | calculation |
| 2021   | 2 | calculation |
| 2016   | 2 | calculation |

## 9.4 Defining and Differentiating Vector-Valued Functions

*4 questions • calculation x4*

| Source | Q | Type        |
|--------|---|-------------|
| 2023   | 2 | calculation |
| 2022   | 2 | calculation |
| 2021   | 2 | calculation |
| 2015   | 2 | calculation |

## 9.5 Integrating Vector-Valued Functions

*2 questions • calculation x2*

| Source | Q | Type        |
|--------|---|-------------|
| 2022   | 2 | calculation |
| 2015   | 2 | calculation |

## 9.6 Solving Motion Problems Using Parametric and Vector-Valued Functions

*7 questions • calculation x7*

| Source | Q | Type        |
|--------|---|-------------|
| 2024   | 2 | calculation |
| 2023   | 2 | calculation |
| 2022   | 2 | calculation |
| 2021   | 2 | calculation |
| 2018   | 2 | calculation |
| 2016   | 2 | calculation |
| 2015   | 2 | calculation |

## 9.7 Defining Polar Coordinates and Differentiating in Polar Form

*6 questions • calculation x6*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 2 | calculation |
| 2025   | 2 | calculation |
| 2019   | 2 | calculation |
| 2018   | 5 | calculation |
| 2017   | 2 | calculation |
| 2014   | 2 | calculation |

## 9.8 Find the Area of a Polar Region or the Area Bounded by a Single Polar Curve

*3 questions • calculation x3*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 2 | calculation |
| 2019   | 2 | calculation |
| 2017   | 2 | calculation |

## 9.9 Finding the Area of the Region Bounded by Two Polar Curves

*5 questions • calculation x5*

| Source | Q | Type        |
|--------|---|-------------|
| 2025   | 2 | calculation |
| 2019   | 2 | calculation |
| 2018   | 5 | calculation |
| 2017   | 2 | calculation |
| 2014   | 2 | calculation |

## 10.2 Working with Geometric Series

*4 questions • calculation x4*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 6 | calculation |
| 2025   | 6 | calculation |
| 2022   | 6 | calculation |
| 2014   | 6 | calculation |

## 10.4 Integral Test for Convergence

*2 questions • calculation x2*

| Source | Q | Type        |
|--------|---|-------------|
| 2021   | 6 | calculation |
| 2017   | 5 | calculation |

## 10.6 Comparison Tests for Convergence

*1 question • calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2021   | 6 | calculation |

## 10.7 Alternating Series Test for Convergence

*2 questions • proof, calculation*

| Source | Q | Type        |
|--------|---|-------------|
| 2017   | 6 | proof       |
| 2016   | 6 | calculation |

## 10.8 Ratio Test for Convergence

*4 questions • calculation x4*

| Source | Q | Type        |
|--------|---|-------------|
| 2025   | 6 | calculation |
| 2024   | 6 | calculation |
| 2022   | 6 | calculation |
| 2015   | 6 | calculation |

## 10.9 Determining Absolute or Conditional Convergence

*2 questions • calculation, proof*

| Source | Q | Type        |
|--------|---|-------------|
| 2021   | 6 | calculation |
| 2017   | 6 | proof       |

## 10.10 Alternating Series Error Bound

*8 questions • calculation x7, proof*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 6 | calculation |
| 2024   | 6 | calculation |
| 2022   | 6 | calculation |
| 2021   | 6 | calculation |
| 2019   | 6 | calculation |
| 2018   | 6 | calculation |
| 2017   | 6 | proof       |
| 2016   | 6 | calculation |

## 10.11 Finding Taylor Polynomial Approximations of Functions

*6 questions • calculation x6*

| Source | Q | Type        |
|--------|---|-------------|
| 2025   | 5 | calculation |
| 2023   | 6 | calculation |
| 2021   | 5 | calculation |
| 2019   | 6 | calculation |
| 2016   | 6 | calculation |
| 2015   | 6 | calculation |

## 10.12 Lagrange Error Bound

*3 questions • calculation x3*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 6 | calculation |
| 2025   | 5 | calculation |
| 2023   | 6 | calculation |

## 10.13 Radius and Interval of Convergence of Power Series

*8 questions • calculation x8*

| Source | Q | Type        |
|--------|---|-------------|
| 2025   | 6 | calculation |
| 2024   | 6 | calculation |
| 2022   | 6 | calculation |
| 2021   | 6 | calculation |
| 2018   | 6 | calculation |
| 2016   | 6 | calculation |
| 2015   | 6 | calculation |
| 2014   | 6 | calculation |

## 10.14 Finding Taylor or Maclaurin Series for a Function

*9 questions • calculation x8, proof*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 6 | calculation |
| 2025   | 6 | calculation |
| 2024   | 6 | calculation |
| 2019   | 6 | calculation |
| 2018   | 6 | calculation |
| 2017   | 6 | proof       |
| 2016   | 6 | calculation |
| 2015   | 6 | calculation |
| 2014   | 6 | calculation |

## 10.15 Representing Functions as Power Series

*4 questions • calculation x3, proof*

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 6 | calculation |
| 2022   | 6 | calculation |
| 2017   | 6 | proof       |
| 2015   | 6 | calculation |