

**AP Physics C: Mechanics**  
Past-Paper Exercise Sheets — Question Index  
36 subtopics • 222 questions

## 1.2 Displacement, Velocity, and Acceleration

*7 questions • calculation x7*

| Source     | Q | Type        |
|------------|---|-------------|
| 2019 Set 1 | 1 | calculation |
| 2019 Set 2 | 1 | calculation |
| 2019 Set 2 | 2 | calculation |
| 2018       | 1 | calculation |
| 2017       | 2 | calculation |
| 2015       | 1 | calculation |
| 2014       | 1 | calculation |

## 1.3 Representing Motion

*5 questions • calculation x5*

| Source     | Q | Type        |
|------------|---|-------------|
| 2023 Set 2 | 1 | calculation |
| 2019 Set 1 | 1 | calculation |
| 2019 Set 2 | 2 | calculation |
| 2018       | 1 | calculation |
| 2015       | 1 | calculation |

## 1.5 Motion in Two or Three Dimensions

*6 questions • calculation x6*

| Source     | Q | Type        |
|------------|---|-------------|
| 2026       | 2 | calculation |
| 2021 Set 2 | 3 | calculation |
| 2019 Set 1 | 2 | calculation |
| 2017       | 3 | calculation |
| 2015       | 2 | calculation |
| 2014       | 3 | calculation |

## 2.1 Systems and Center of Mass

*5 questions • calculation x5*

| Source     | Q | Type        |
|------------|---|-------------|
| 2026       | 2 | calculation |
| 2024 Set 1 | 3 | calculation |
| 2021 Set 1 | 3 | calculation |
| 2021 Set 2 | 2 | calculation |
| 2018       | 2 | calculation |

## 2.2 Forces and Free-Body Diagrams

*12 questions • calculation x12*

| Source     | Q | Type        |
|------------|---|-------------|
| 2024 Set 1 | 3 | calculation |
| 2024 Set 2 | 3 | calculation |
| 2023 Set 1 | 1 | calculation |
| 2023 Set 1 | 3 | calculation |
| 2022 Set 1 | 1 | calculation |
| 2022 Set 1 | 3 | calculation |
| 2022 Set 2 | 1 | calculation |
| 2022 Set 2 | 3 | calculation |
| 2021 Set 1 | 1 | calculation |
| 2021 Set 2 | 1 | calculation |
| 2021 Set 2 | 3 | calculation |
| 2019 Set 1 | 2 | calculation |

## 2.3 Newton's Third Law

*2 questions • calculation x2*

| Source     | Q | Type        |
|------------|---|-------------|
| 2022 Set 1 | 2 | calculation |
| 2016       | 2 | calculation |

## 2.4 Newton's First Law

*2 questions • calculation x2*

| Source     | Q | Type        |
|------------|---|-------------|
| 2019 Set 1 | 1 | calculation |
| 2019 Set 2 | 1 | calculation |

## 2.5 Newton's Second Law

*12 questions • calculation x12*

| Source     | Q | Type        |
|------------|---|-------------|
| 2026       | 1 | calculation |
| 2024 Set 1 | 2 | calculation |
| 2023 Set 1 | 3 | calculation |
| 2023 Set 2 | 1 | calculation |
| 2022 Set 1 | 1 | calculation |
| 2022 Set 2 | 1 | calculation |
| 2021 Set 1 | 1 | calculation |
| 2021 Set 1 | 2 | calculation |
| 2021 Set 2 | 1 | calculation |
| 2021 Set 2 | 3 | calculation |
| 2019 Set 1 | 1 | calculation |
| 2019 Set 2 | 1 | calculation |

## 2.6 Gravitational Force

6 questions • calculation x6

| Source     | Q | Type        |
|------------|---|-------------|
| 2025       | 3 | calculation |
| 2021 Set 1 | 1 | calculation |
| 2021 Set 2 | 1 | calculation |
| 2018       | 1 | calculation |
| 2017       | 1 | calculation |
| 2015       | 1 | calculation |

## 2.7 Kinetic and Static Friction

12 questions • calculation x11, data response

| Source     | Q | Type          |
|------------|---|---------------|
| 2026       | 1 | calculation   |
| 2026       | 3 | data response |
| 2025       | 2 | calculation   |
| 2025       | 3 | calculation   |
| 2025       | 4 | calculation   |
| 2023 Set 1 | 3 | calculation   |
| 2022 Set 1 | 1 | calculation   |
| 2022 Set 2 | 1 | calculation   |
| 2021 Set 2 | 1 | calculation   |
| 2019 Set 2 | 1 | calculation   |
| 2018       | 3 | calculation   |
| 2017       | 1 | calculation   |

## 2.8 Spring Forces

8 questions • calculation x7, data response

| Source     | Q | Type          |
|------------|---|---------------|
| 2026       | 3 | data response |
| 2025       | 2 | calculation   |
| 2024 Set 1 | 1 | calculation   |
| 2024 Set 2 | 1 | calculation   |
| 2023 Set 1 | 1 | calculation   |
| 2022 Set 2 | 2 | calculation   |
| 2016       | 2 | calculation   |
| 2016       | 3 | calculation   |

## 2.9 Resistive Forces

5 questions • calculation x5

| Source     | Q | Type        |
|------------|---|-------------|
| 2026       | 1 | calculation |
| 2024 Set 1 | 2 | calculation |
| 2024 Set 2 | 2 | calculation |
| 2019 Set 1 | 1 | calculation |
| 2017       | 2 | calculation |

## 2.10 Circular Motion

6 questions • calculation x6

| Source     | Q | Type        |
|------------|---|-------------|
| 2021 Set 1 | 2 | calculation |
| 2021 Set 2 | 3 | calculation |
| 2019 Set 1 | 2 | calculation |
| 2019 Set 2 | 3 | calculation |
| 2016       | 3 | calculation |
| 2014       | 2 | calculation |

## 3.1 Translational Kinetic Energy

3 questions • calculation x3

| Source     | Q | Type        |
|------------|---|-------------|
| 2024 Set 1 | 1 | calculation |
| 2019 Set 2 | 2 | calculation |
| 2016       | 2 | calculation |

### 3.2 Work

4 questions • calculation x4

| Source     | Q | Type        |
|------------|---|-------------|
| 2024 Set 1 | 1 | calculation |
| 2023 Set 1 | 1 | calculation |
| 2022 Set 1 | 1 | calculation |
| 2022 Set 2 | 1 | calculation |

### 3.3 Potential Energy

7 questions • calculation x7

| Source     | Q | Type        |
|------------|---|-------------|
| 2025       | 2 | calculation |
| 2021 Set 1 | 2 | calculation |
| 2019 Set 1 | 2 | calculation |
| 2019 Set 2 | 2 | calculation |
| 2018       | 2 | calculation |
| 2017       | 2 | calculation |
| 2014       | 1 | calculation |

### 3.4 Conservation of Energy

12 questions • calculation x11, data response

| Source     | Q | Type          |
|------------|---|---------------|
| 2026       | 3 | data response |
| 2025       | 2 | calculation   |
| 2025       | 3 | calculation   |
| 2024 Set 1 | 1 | calculation   |
| 2024 Set 2 | 1 | calculation   |
| 2023 Set 1 | 1 | calculation   |
| 2023 Set 1 | 3 | calculation   |
| 2022 Set 1 | 2 | calculation   |
| 2022 Set 2 | 1 | calculation   |
| 2021 Set 1 | 2 | calculation   |
| 2021 Set 2 | 2 | calculation   |
| 2021 Set 2 | 3 | calculation   |

### 4.1 Linear Momentum

5 questions • calculation x5

| Source     | Q | Type        |
|------------|---|-------------|
| 2026       | 2 | calculation |
| 2025       | 1 | calculation |
| 2024 Set 2 | 1 | calculation |
| 2022 Set 1 | 2 | calculation |
| 2022 Set 2 | 2 | calculation |

### 4.2 Change in Momentum and Impulse

7 questions • calculation x7

| Source     | Q | Type        |
|------------|---|-------------|
| 2025       | 1 | calculation |
| 2023 Set 2 | 1 | calculation |
| 2022 Set 1 | 2 | calculation |
| 2022 Set 2 | 2 | calculation |
| 2019 Set 2 | 2 | calculation |
| 2018       | 2 | calculation |
| 2014       | 1 | calculation |

### 4.3 Conservation of Linear Momentum

11 questions • calculation x11

| Source     | Q | Type        |
|------------|---|-------------|
| 2026       | 2 | calculation |
| 2025       | 1 | calculation |
| 2024 Set 1 | 1 | calculation |
| 2023 Set 1 | 1 | calculation |
| 2023 Set 2 | 1 | calculation |
| 2022 Set 1 | 2 | calculation |
| 2022 Set 2 | 2 | calculation |
| 2019 Set 1 | 2 | calculation |
| 2018       | 2 | calculation |
| 2016       | 2 | calculation |
| 2014       | 3 | calculation |

### 4.4 Elastic and Inelastic Collisions

7 questions • calculation x7

| Source     | Q | Type        |
|------------|---|-------------|
| 2025       | 1 | calculation |
| 2024 Set 1 | 1 | calculation |
| 2022 Set 1 | 2 | calculation |
| 2019 Set 1 | 2 | calculation |
| 2018       | 2 | calculation |
| 2016       | 2 | calculation |
| 2015       | 2 | calculation |

### 5.1 Rotational Kinematics

*4 questions • calculation x4*

| Source     | Q | Type        |
|------------|---|-------------|
| 2023 Set 2 | 3 | calculation |
| 2022 Set 1 | 3 | calculation |
| 2022 Set 2 | 3 | calculation |
| 2021 Set 2 | 2 | calculation |

### 5.2 Connecting Linear and Rotational Motion

*4 questions • calculation x4*

| Source     | Q | Type        |
|------------|---|-------------|
| 2021 Set 1 | 3 | calculation |
| 2019 Set 1 | 3 | calculation |
| 2017       | 3 | calculation |
| 2015       | 3 | calculation |

### 5.3 Torque

*8 questions • calculation x8*

| Source     | Q | Type        |
|------------|---|-------------|
| 2024 Set 1 | 3 | calculation |
| 2024 Set 2 | 3 | calculation |
| 2023 Set 1 | 3 | calculation |
| 2022 Set 1 | 3 | calculation |
| 2022 Set 2 | 3 | calculation |
| 2021 Set 1 | 3 | calculation |
| 2021 Set 2 | 2 | calculation |
| 2019 Set 1 | 3 | calculation |

### 5.4 Rotational Inertia

*12 questions • calculation x12*

| Source     | Q | Type        |
|------------|---|-------------|
| 2024 Set 1 | 3 | calculation |
| 2024 Set 2 | 3 | calculation |
| 2023 Set 1 | 2 | calculation |
| 2023 Set 2 | 3 | calculation |
| 2022 Set 2 | 3 | calculation |
| 2021 Set 1 | 3 | calculation |
| 2021 Set 2 | 2 | calculation |
| 2019 Set 1 | 3 | calculation |
| 2019 Set 2 | 3 | calculation |
| 2018       | 3 | calculation |
| 2016       | 3 | calculation |
| 2015       | 3 | calculation |

### 5.5 Rotational Equilibrium and Newton's First Law in Rotational Form

*4 questions • calculation x4*

| Source     | Q | Type        |
|------------|---|-------------|
| 2024 Set 1 | 3 | calculation |
| 2024 Set 2 | 3 | calculation |
| 2022 Set 1 | 3 | calculation |
| 2022 Set 2 | 3 | calculation |

### 5.6 Newton's Second Law in Rotational Form

*10 questions • calculation x10*

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

### 6.1 Rotational Kinetic Energy

*9 questions • calculation x9*

| Source     | Q | Type        |
|------------|---|-------------|
| 2026       | 4 | calculation |
| 2023 Set 1 | 3 | calculation |
| 2023 Set 2 | 3 | calculation |
| 2021 Set 1 | 3 | calculation |
| 2021 Set 2 | 2 | calculation |
| 2019 Set 1 | 3 | calculation |
| 2018       | 3 | calculation |
| 2017       | 3 | calculation |
| 2015       | 3 | calculation |

## 6.2 Torque and Work

2 questions • calculation x2

| Source | Q | Type        |
|--------|---|-------------|
| 2026   | 4 | calculation |
| 2016   | 3 | calculation |

## 6.3 Angular Momentum and Angular Impulse

2 questions • calculation x2

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

## 6.4 Conservation of Angular Momentum

4 questions • calculation x4

| Source     | Q | Type        |
|------------|---|-------------|
| 2023 Set 1 | 3 | calculation |
| 2019 Set 1 | 3 | calculation |
| 2016       | 3 | calculation |
| 2014       | 3 | calculation |

## 6.5 Rolling

6 questions • calculation x6

| Source     | Q | Type        |
|------------|---|-------------|
| 2026       | 4 | calculation |
| 2025       | 4 | calculation |
| 2023 Set 1 | 3 | calculation |
| 2019 Set 2 | 3 | calculation |
| 2018       | 3 | calculation |
| 2017       | 3 | calculation |

## 7.1 Defining Simple Harmonic Motion (SHM)

2 questions • calculation x2

| Source | Q | Type        |
|--------|---|-------------|
| 2017   | 2 | calculation |
| 2016   | 2 | calculation |

## 7.2 Frequency and Period of SHM

5 questions • calculation x5

| Source     | Q | Type        |
|------------|---|-------------|
| 2024 Set 1 | 1 | calculation |
| 2024 Set 2 | 1 | calculation |
| 2023 Set 1 | 2 | calculation |
| 2023 Set 2 | 2 | calculation |
| 2017       | 2 | calculation |

## 7.4 Energy of Simple Harmonic Oscillators

3 questions • calculation x3

| Source     | Q | Type        |
|------------|---|-------------|
| 2025       | 2 | calculation |
| 2023 Set 1 | 2 | calculation |
| 2023 Set 2 | 2 | calculation |

## 7.5 Simple and Physical Pendulums

3 questions • calculation x3

| Source     | Q | Type        |
|------------|---|-------------|
| 2024 Set 1 | 1 | calculation |
| 2019 Set 1 | 2 | calculation |
| 2015       | 2 | calculation |