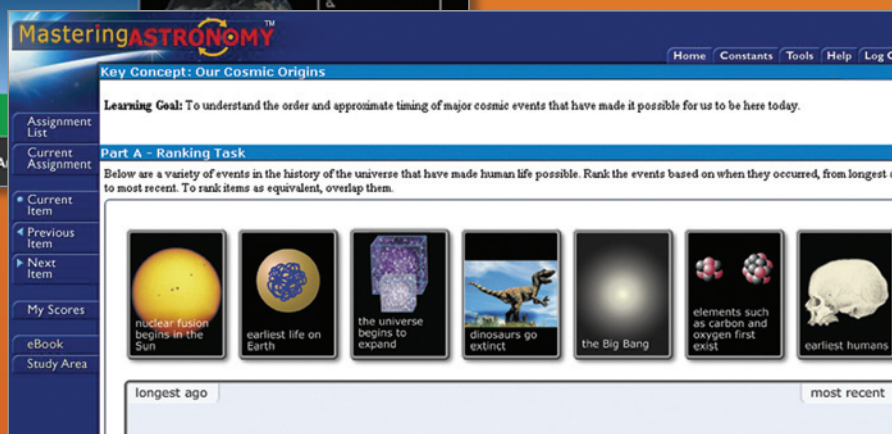


# Improve Your Understanding!

**REGISTER NOW** for  
**MasteringASTRONOMY™**



- Master the toughest topics in astronomy with online tutorials that provide personal feedback and individual coaching
- Prepare for exams using practice quizzes
- Visualize difficult concepts with Interactive Figures™ and Self-Guided Tutorials
- Learn at your own pace using self-study resources
- Access your textbook online 24/7



[www.masteringastronomy.com](http://www.masteringastronomy.com)

## STUDENTS

### To Register Using the Student Access Kit

Your textbook may have been packaged with a MasteringAstronomy Student Access Kit. This kit contains your access code to this valuable website.

1. Go to [www.masteringastronomy.com](http://www.masteringastronomy.com).
2. Click **"New Students"** under Register.
3. Select **"Yes, I have an access code."**
4. Follow the on-screen instructions to create your Login Name and Password.

If you receive a Course ID from your instructor: Enter this ID either when you first log in or after clicking "Join Course."

### To Purchase Access Online

If your textbook was not packaged with a MasteringAstronomy Student Access Kit, you can purchase access online using a major credit card or PayPal.

1. Go to [www.masteringastronomy.com](http://www.masteringastronomy.com).
2. Click **"New Students"** under Register.
3. Select **"No, I need to purchase access online now."**
4. Identify your book cover.
5. Follow the on-screen instructions to create your Login Name and Password.

## INSTRUCTORS

### To Request Access Online

1. Go to [www.masteringastronomy.com](http://www.masteringastronomy.com).
2. Click **"New Instructors"** under Register.
3. Follow the instructions to request an instructor access code (if you don't have one yet). Then, register with this code to create your Login Name and Password.

Please contact your sales representative for more information.

#### TECHNICAL SUPPORT

For registration queries: <http://247pearsoned.custhelp.com>  
For all other queries: [www.masteringastronomy.com/support](http://www.masteringastronomy.com/support)

# Improve Your Understanding!

REGISTER NOW for  
**MasteringCHEMISTRY™**

**MasteringCHEMISTRY**  
Home Constants Tools Help Log Out

Assignment List  
Current Assignment  
Current Item  
Previous Item  
Next Item  
My Scores  
Study Area  
eBook  
PEARSON

**Changing the starting concentrations**  
Intro <<previous next>> page 5 of 10

To get a better sense of how equilibrium works, you would probably try filling your flask with different amounts of starting materials.

For instance, what would happen if you started with all  $\text{NO}_2$  — that is, with all

We get the same result at equilibrium as in our first experiment, even though this time we started with only  $\text{NO}_2$ .

"That's odd," you might say. Let's try this time starting with an equal amount of  $\text{N}_2\text{O}_4$  and  $\text{NO}_2$ . Click Next for that experiment.

- Master the toughest topics in chemistry with online tutorials that provide answer-specific feedback and individual coaching with hints
- Prepare for exams using practice quizzes
- Learn at your own pace using self-study resources
- Access your textbook online 24/7

**MasteringCHEMISTRY**  
Home Constants Tools Help Log Out

Assignment List  
Current Assignment  
Current Item  
Previous Item  
Next Item  
My Scores  
Study Area  
eBook  
PEARSON

**Gas Laws**

This figure (Intro 1 figure) shows a container that is sealed at the top by a movable piston. Inside the container is an ideal gas at 1.00 atm, 20.0 °C, and 1.00 L. This information will apply to all parts of this problem A, B, and C.

Intro 1

piston  
2 L  
container  
1 L  
ideal gas sample

**Part A**  
What will the pressure inside the container become if the piston is moved to the 1.80 L mark while the temperature of the gas is kept constant?  
 $P = 0.556$  atm  
Correct  
submit hints my answers show answer review part

**Part B**  
The gas sample has now returned to its original state of 1.00 atm, 20.0 °C and 1.00 L. What will the pressure become if the temperature of the gas is raised to 200.0 °C and the piston is not allowed to move?  
 $P = 10$  atm  
Try Again; 5 attempts remaining  
submit hints my answers show answer review part

**Feedback**  
Your answer would be correct if the absolute temperature of the gas increased by a factor of ten, but that is not the case. Remember, absolute temperature is measured in Kelvin, not Celsius.  
Close

**Part C**  
The gas described in parts A and B has a mass of 1.66 grams. The sample is most likely which monatomic gas?

# www.masteringchemistry.com

## STUDENTS

### To Register Using the Student Access Kit

Your textbook may have been packaged with a **MasteringChemistry Student Access Kit**. This kit contains your access code to this valuable website.

1. Go to [www.masteringchemistry.com](http://www.masteringchemistry.com).
2. Click **"New Students"** under Register.
3. Select **"Yes, I have an access code."**
4. Follow the on-screen instructions to create your Login Name and Password.

If you receive a Course ID from your instructor: Enter this ID either when you first log in or after clicking "Join Course."

### To Purchase Access Online

If your textbook was not packaged with a **MasteringChemistry Student Access Kit**, you can purchase access online using a major credit card or PayPal.

1. Go to [www.masteringchemistry.com](http://www.masteringchemistry.com).
2. Click **"New Students"** under Register.
3. Select **"No, I need to purchase access online now."**
4. Identify your book cover.
5. Follow the on-screen instructions to create your Login Name and Password.

## INSTRUCTORS

### To Request Access Online

1. Go to [www.masteringchemistry.com](http://www.masteringchemistry.com).
2. Click **"New Instructors"** under Register.
3. Follow the instructions to request an instructor access code (if you don't have one yet). Then, register with this code to create your Login Name and Password.

Please contact your sales representative for more information.

#### TECHNICAL SUPPORT

For registration queries: <http://247pearsoned.custhelp.com>  
For all other queries: [www.masteringchemistry.com/support](http://www.masteringchemistry.com/support)

# Improve Your Understanding!

REGISTER NOW for  
MasteringPHYSICS™

The screenshot displays the MasteringPhysics interface. On the left, a navigation menu includes 'Assignment List', 'Current Assignment', 'Current Item', 'Previous Item', 'Next Item', 'My Scores', 'Study Area', and 'eBook'. Below the menu, a sidebar shows 'PEARSON' and three velocity values:  $v_{rms} = 1367 \text{ m/s}$ ,  $v_m = 1116 \text{ m/s}$ , and  $\Delta v = 200 \text{ m/s}$ . The main area is split into two panels. The top panel shows a graph of  $\Delta N / \Delta v$  versus  $v, \text{ m/s}$ , with a bell-shaped curve and a vertical line at  $v_{rms}$ . The bottom panel shows a 'Conical Pendulum I' problem. The problem text states: '(Intro 1 figure) A bob of mass  $m$  is suspended from a fixed point with a massless string of length  $L$  (i.e., it is a pendulum). You are to investigate the motion in which the string moves in a cone with half-angle  $\theta$ .' Below the text is a diagram of a conical pendulum with a bob of mass  $m$ , string length  $L$ , and angle  $\theta$ . To the right of the diagram are two parts of the problem: 'Part A' asks for the tangential speed  $v$  in terms of  $m$ ,  $L$ ,  $\theta$ , and  $g$ ; 'Part B' asks for the time for one full revolution in terms of  $m$ ,  $L$ ,  $\theta$ , and  $g$ . Both parts have input fields and 'submit' buttons.

- Master the toughest topics in physics with online tutorials that provide answer-specific feedback and individual coaching with hints
- Visualize difficult concepts with ActivPhysics Online™ simulations, including self-assessment questions
- Learn at your own pace using self-study resources
- Access your textbook online 24/7
- Prepare for exams

[www.masteringphysics.com](http://www.masteringphysics.com)

## STUDENTS

### To Register Using the Student Access Kit

Your textbook may have been packaged with a MasteringPhysics Student Access Kit. This kit contains your access code to this valuable website.

1. Go to [www.masteringphysics.com](http://www.masteringphysics.com).
2. Click **"New Students"** under Register.
3. Select **"Yes, I have an access code."**
4. Follow the on-screen instructions to create your Login Name and Password.

If you receive a Course ID from your instructor: Enter this ID either when you first log in or after clicking "Join Course."

### To Purchase Access Online

If your textbook was not packaged with a MasteringPhysics Student Access Kit, you can purchase access online using a major credit card or PayPal.

1. Go to [www.masteringphysics.com](http://www.masteringphysics.com).
2. Click **"New Students"** under Register.
3. Select **"No, I need to purchase access online now."**
4. Identify your book cover.
5. Follow the on-screen instructions to create your Login Name and Password.

## INSTRUCTORS

### To Request Access Online

1. Go to [www.masteringphysics.com](http://www.masteringphysics.com).
2. Click **"New Instructors"** under Register.
3. Follow the instructions to request an instructor access code (if you don't have one yet). Then, register with this code to create your Login Name and Password.

Please contact your sales representative for more information.

#### TECHNICAL SUPPORT

For registration queries: <http://247pearsoned.custhelp.com>  
For all other queries: [www.masteringphysics.com/support](http://www.masteringphysics.com/support)