# Errata for the Third Printing of
## *Exploring Creation With Physics, 2ⁿᵈ Edition*

With the help of students and teachers, we have found a few typos in the third printing of the second edition. These are listed in the errata sheet for the first and second printings as well.

<u>Student Text</u>

<u>Introductory Remarks:</u>

**p. 3**          In the second paragraph on the page, the object discussed is not really a cube. It should be called a box

<u>Module #1</u>:

**This applies only to the full course CD**

In the section entitled "Speed and Velocity," near the top, the phrase:

…is 60.0 meters · 30.0 seconds…  should read:

…is 60.0 meters ÷ 30.0 seconds…

**This applies only to the full course CD**

In Experiment 1.2, step #7, the phrase:

…*Dt. Take your value for Dv and divide it by Dt…*  should read:

…$\Delta t$. *Take your value for $\Delta v$ and divide it by $\Delta t$…*

<u>Module #3</u>:

**This applies only to the full course CD**

In the section entitled "Vectors," near the bottom, the phrase:

…*learned that to solve for q in the above equation…* should read

…*learned that to solve for $\theta$ in the above equation…*

<u>Module #4</u>:

**p. 139**        In question #3, "gunnery sergeant" should be replaced with "crew," as there is no gunnery sergeant position in the navy.

<u>Module #5</u>:

**CD ONLY**      In the section entitled "An Equation for the Frictional Force," The bold-faced sentence should have a closed parenthesis after µs.

<u>Module #6</u>:

**CD ONLY**      In the section entitled "Translational Motion and Measuring Weight 2," "32 m/sec2" should be replaced by "32 ft/sec2"

**p. 195**   The 7th line from the bottom should begin, "to indicate this, because it is used to get the magnitude of the torque…"  the word "to" was left out.

**p. 206**   The second equation on the page should be $T_{1y}=T_1 \cdot \sin(45^o)=0.71 \cdot T_1$.

Module #7:

**p. 221**   In the fourth line of the third paragraph, the word "strong" should be replaced with "string."

Module #8:

**p. 278**   In the last equation for 8.3, there should be an "=" before $2.6 \times 10^3$

**p. 282**   In the fifth and sixth equations on the page, 0.65 should be 0.67.  This does not affect the answer.

**p. 286**   In problem #9, the time should be 2.40 minutes.  This gives three significant figures, and that's how many are used for time in the solution.

Module #9:

**CD ONLY**   "euation (9.7)" should be replaced with "Equation (9.7)."

In the section entitled "Angular Momentum, the units for angular momentum should be $\frac{kg \cdot m^2}{sec}$, not $\frac{kg \cdot m}{sec}$

**p. 303**   The left side of the second to the last equation should read $-6.8 \times 10^3$, because when you multiply the numbers above, you have only three significant figures for each term.  Then, when you add the terms, you can only report your answer to the hundreds place.  This changes the final equation and the final answer. The final answer, then, should be 4.3 m/sec.

Module #13:

**p. 322**   Last paragraph on this page, fourth line up, should say "force equal to but opposite the weight of the object…"

Module #13:

**p. 440**   The last three words on the page should be "Figure 13.3, a"

**p. 445**   In the second problem of Example 13.4, the charge should be -0.0060-mC.

Module #14:

**p. 462**        In the equation for $\Delta V$, the initial potential should be $6.4 \times 10^7$ V, as calculated in the first two equations on the page. This changes $\Delta V$ to $1.8 \times 10^7$ V, which changes $\Delta PE$ to $-1.0 \times 10^5$ J.

Module #15:

**p. 507**        Because of the rules of addition for significant figures, 1/Reffective should be 0.150 1/$\Omega$, which makes Reffective 6.67 $\Omega$.

Module 16:

**p. 542**        The definition of direct current should say "flows" not "flow".

**p. 546**        The last seven words of #15 should say "magnet is the same in each case".

Extra Practice Problems for Module #6:

**p. 569**        The angle for problem 1 should be $45^\circ$, not $45.0^\circ$.

Extra Practice Problems for Module #9:

**p. 573**        Question #6 should ask for the velocity, not the speed.

**p. 573**        Question #8 should ask for the speed, not the velocity.

# SOLUTIONS AND TESTS GUIDE

Answers to the Review Questions for Module #11

**p. 11**   In problem #5, the fourth difference should read "<u>Sound waves travel more quickly in solids than in liquids and more quickly in liquids than in gases, whereas light waves generally travel more slowly the more dense the medium</u>."

Solutions to the Practice Problems for Module #6:

**p. 53**   The weight that starts the 3<sup>rd</sup> line of the page should be 210 N, not 220 N. That weight is used in the solution, so the answer is not affected.

**p. 55**   For question #9, here is a better way of calculating the acceleration. This keeps consistent with our use of significant figures.

$$f + -w \cdot \sin(\theta) = ma$$

$$95 \text{ Newtons} + -(290 \text{ Newtons}) \cdot \sin(23°) = (30.1 \text{ kg}) \cdot a$$

$$95 \text{ Newtons} + -110 \text{ Newtons} = (30.1 \text{ kg}) \cdot a$$

$$a = -20 \text{ Newtons} / 30.1 \text{ kg} = -0.7 \text{ m/sec2}$$

Solutions to the Practice Problems for Module #7:

**p. 61**   The answer to question #10, should say 2.24 hours instead of 2.2 hours.

Solutions to the Practice Problems for Module #8:

**p. 64**   The value inside the square root should be 350 instead of 340 for question 3.

**p. 65**   The value inside the square root should be 290 instead of 292 for question 4.

Solutions to the Practice Problems for Module #9:

**p. 72**   The last equation for #6 should have a positive 18 in the numerator. This does not affect the final answer.

Solutions to the Practice Problems for Module #12:

**p. 87**   The answer to #7 should be _1.70_. Since there are three significant figures in each number of the equation, there should be three in the answer.

Solutions to the Practice Problems for Module #13:

**p. 92**          The units for the answer to 5b should be Newtons / C.

Solutions to the Practice Problems for Module #14:

**p. 98**          The third equation should be:

$$\Delta PE = q\Delta V = (1.5\ \text{C})\cdot(-8\times10^9\ \frac{\text{N}\cdot\text{m}}{\text{C}}) = -1\times10^{10}\ \text{N}\cdot\text{m} = -1\times10^{10}\ \text{J}$$

Solutions to the Extra Practice Problems for Module #2:

**p. 110**          The solution to problem #5 should be -4 ft/sec$^2$. The units in the underlined portion of the answer should be changed to ft/sec$^2$ as well.

**p. 111**          In problems 8 and 9, the very last sentences should both end, "or 270 ft/sec down." In addition, the acceleration should be -32 ft/sec$^2$ and the displacement -1,140 ft, since both are directed down.

Solutions to the Extra Practice Problems for Module #6:

**p.128**          The second equation in the problem should read:

$$T_{2y} = (10.3\ \text{lbs})\cdot\sin(105°) = 9.95\ \text{lbs}$$

This does affect the weight calculation to make 19.9 lbs. This does not affect the solution. However, the angle must be defined properly, which makes it 105° rather than 75°. This is where the third significant figure comes from.

**p. 131**          The solution to problem #8 should be -7.0 m/sec$^2$.

Solutions to the Extra Practice Problems for Module #7:

**p. 136**          In the last equation for problem #8, the denominator should not be squared. It does not affect the answer, as it was not squared when the math was done.

Solutions to the Extra Practice Problems for Module #9:

**p. 145**          In problem #7, the numerator for $v_{both}$ should be 1.15x10$^5$, which changes the answer to 83.2 m/sec.

Test for Module #8:

**p. 190 and**          #13 should start, "A 345-gram box slides down"
**pullout tests**
**page 15**

Solutions to the Test for Module #8:

**p. 238**          The final answer for #10 should be 5.3 m/sec.

**p. 239**          The points for problem #12 should read, "(2 pts: one for equating kinetic energy and the work done by friction, one for the displacement)"

**p. 240**          The numerator of the last equation on the page should be **1.83 x 10³**.  This does not affect the answer.

**p. 239 and 240**   All references to a "ball" should be replaced with "box" in problem #13

Solutions to the Test for Module #9:

**p. 243**          In the last equation for problem #12, the units on 3.7 should be m/sec.  The "kg" part of the unit should not be there.

Solutions to Quarterly Test #1:

**p. 280**          Because of the significant figures rules, the answer to problem #25 should be *90 ft*.

Solutions to Quarterly Test #2:

**p. 287**          To keep things consistent with the way significant figures are handled, the answer to #21 should be *4.7 m/sec*.  Minor differences like this are not important, however.

**p. 288**          The second equation on the page is missing the closing square bracket under the square root sign.

**p. 288**          The grading suggestion should read, "(2 pts: one for equating kinetic energy and the work done by friction, one for the distance)"

Solutions to Quarterly Test #3:

**p. 291**          In the first equation on the page, there should be no "kg" unit with 5.7.  Instead, the "kg" unit with 58.0 should cancel the "kg" unit in the denominator.

**p. 292**          In the second equation on the page, the number in the denominator should be 0.075.  The typo was not used in the calculation, so the answer is not affected.

**p. 294**          In the equation for #18, the units on 21.3 were left out.  They should be "m/sec."

Solutions to Quarterly Test #4:

**p. 297**          Problem #4: The answer should be -2.0 C.

**p. 297**    Problem #5:  The answer should read, "The greatest acceleration will occur where the force is the greatest.  In an electric field, this occurs where the line density is the greatest, <u>directly next to A or B</u>."

**p. 301**    Problem #19: the third set of parallel resistors should have a resistance of 9.90 $\Omega$, which makes the total resistance 23.4 $\Omega$, which makes the current 5.13 A, which makes the power 6.16 Watts.