

Errata for The Feynman Lectures on Physics Volume I New Millennium (3rd printing)

The errors in this list appear in the 3rd printing of *The Feynman Lectures on Physics: New Millennium Edition* (2011) and earlier printings and editions; these errors have been corrected in the 4th hardback printing of the *New Millennium Edition* (2011).

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Global change: coulomb->Coulomb

Coulomb, wherever used as a proper name (and not a unit of charge) should be capitalized, as in the following cases, where it is currently not capitalized:

- 28-1: "the simple coulomb law"
- 28-3: "the delayed coulomb field"

I:13-9, par 2

The earth can be imagined as a series of spherical shells, each one of which contributes an energy which depends only on its mass and its distance from the center;

Needs clarification.

The earth can be imagined as a series of spherical shells, each one of which contributes an energy which depends only on its mass and the distance from its center to the particle;

I:22-6, par 1

When we take a small fraction Δ of 1024 as Δ approaches zero, what will the answer be?

Confusing wording. The "small fraction" being taken is $\Delta/1024$, the "answer" being $10^{\Delta/1024}$, as shown in Table 22-1, but the phrase "a small fraction Δ of 1024" is generally interpreted to mean 1024Δ where Δ is a small fraction, not $\Delta/1024$, which is the case here. This has confused some readers (see <http://math.stackexchange.com/questions/171295/motivation-for-definition-of-logarithm-in-feynmans-lectures-on-physics>.)

When we take a small fraction $\Delta/1024$ as Δ approaches zero, what will the answer be?

I:28-3, par 1

... the apparent direction $\theta_{r'}$ —the direction it used to be—the so-called retarded direction—

Wrong symbol (' $\theta_{r'}$ ' vs. ' $e_{r'}$ ').

... the apparent direction $e_{r'}$ —the direction it used to be—the so-called retarded direction—

I:41-10, par 1

So let us see how much x times the velocity should be. Now x times the velocity has a mean that does not change with time, because when it gets to some position it has no remembrance of where it was before, so things are no longer changing with time. So this quantity, on the average, is zero.

Unclear wording. From this wording it appears that "this quantity" (in the last sentence) refers to " x times the velocity," which it does not. When Feynman said "this quantity," he was referring to the first term on the right in the first unnumbered equation on the page, namely $m \cdot d[x(dx/dt)]/dt$, which he underlined on the blackboard at the same time.

So let us see how much the first term should be. Now x times the velocity has a mean that does not change with time, because when it gets to some position it has no remembrance of where it was before, so things are no longer changing with time. So this quantity, on the average, is zero.

I:45-4, par 2

In fact, if one can write $\Delta U = Q + A\Delta B$, where A and B represent different quantities, force and length, pressure and volume, etc., one can apply the results obtained for a gas by substituting A and B for P and V .

Sign error (' P ' vs. ' $-P$ ')

In fact, if one can write $\Delta U = Q + A\Delta B$, where A and B represent different quantities, force and length, pressure and volume, etc., one can apply the results obtained for a gas by substituting A and B for $-P$ and V .

I:45-6, par 1

We know that for an ideal gas the pressure is equal to

$$P = \frac{RT}{V}, \quad (45.13)$$

Eq. (45.13) is true only for one mole of an ideal gas.

We know that for an ideal gas the pressure per mole is equal to

$$P = \frac{RT}{V}, \quad (45.13)$$

I:45-7, par 2

Kinetic theory indicated the possibility, at least roughly, that the number of molecules of vapor above a liquid would be...

Inaccurate statement.

Kinetic theory indicated the possibility, at least roughly, that the number of molecules per unit volume of vapor above a liquid would be...

I:47-3, par 2

Of course, if the object is moved gently. the air merely flows around it, ...

Incorrect punctuation (period instead of comma after 'gently').

Of course, if the object is moved gently, the air merely flows around it, ...

I:47-3, par 2

Then, with the motion. the air is compressed and a change of pressure is produced which pushes on additional air.

Incorrect punctuation (period instead of comma after 'motion').

Then, with the motion, the air is compressed and a change of pressure is produced which pushes on additional air.

I:47-7, par 3

Further, we see that ρV is the mass of gas, which can also be expressed as Nm , or as μ , where m is the mass of a molecule and μ is the molecular weight.

Inaccurate statement; μ is the molecular weight *per mole* of an ideal gas.

Further, we see that ρV is the mass of gas, which can also be expressed as Nm , or as μ per mole, where m is the mass of a molecule and μ is the molecular weight.