Errata for
The Feynman Lectures on Physics Volume I
Commemorative Issue

The errors in this list appear in *The Feynman Lectures on Physics: Commemorative Issue* (1989) and earlier editions; these errors have been corrected in *The Feynman Lectures on Physics: Definitive Edition* (2005).

Errors are listed in the order of their appearance in the book. Each listing consists of the errant text followed by a brief description of the error, followed by corrected text.

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I:5-5, par 1

... that the age of the earth itself is approximately 5.5 billion years.

Wrong age.

... that the age of the earth itself is approximately 4.5 billion years.

I:6-10, par 2

If the particle is reasonably well localized, say near x_1,...

Wrong subscript on x (see Fig 6-10).

If the particle is reasonably well localized, say near x_0,...

I:9-7, par 2

$$v_x(0.05) = 0.000 - 4.000 \times 0.050 = -0.200;$$
$$v_y(0.05) = 1.630 + 0.000 \times 0.100 = 1.630.$$

Wrong equation for v_y (see I:9-6,par 1).

$$v_x(0.05) = 0.000 - 4.000 \times 0.050 = -0.200;$$
$$v_y(0.05) = 1.630 + 0.000 \times 0.050 = 1.630.$$

I:12-9, par 2

The force between two masses m_1 and m_2 was expressed by Newton as $\mathbf{F} = Gm_1m_2\mathbf{r}/r^3$.

Wrong sign.

The force between two masses m_1 and m_2 was expressed by Newton as $\mathbf{F} = -Gm_1m_2\mathbf{r}/r^3$.

I:12-9, Eq 12.9

$$\mathbf{C} = -Gm_i\mathbf{r}_i / r_i^3 \quad (12.9)$$

Missing subscript.

$$\mathbf{C}_i = -Gm_i\mathbf{r}_i / r_i^3 \quad (12.9)$$

I:12-9, par 2

In chapter 7, in working out a case of planetary motion, we used this principle in essence.

Incorrect reference (see I:9-6, Sec 9-7).

In chapter 9, in working out a case of planetary motion, we used this principle in essence.

I:13-7, par 2

. . . But we notice that for each *i,j* value there are two contributions to the sum, one involving $\mathbf{v}_i$, and the other involving $\mathbf{v}_j$, and that these terms have the same appearance as those of Eq. (13.14), where *all* values of *i* and *j* (except $i = j$) are included in the sum.

Incorrect reference.

. . . But we notice that for each *i,j* value there are two contributions to the sum, one involving $\mathbf{v}_i$, and the other involving $\mathbf{v}_j$, and that these terms have the same appearance as those of Eq. (13.15), where *all* values of *i* and *j* (except $i = j$) are included in the sum.

I:23-9, par 2

It was measured by Dr. Möessbauer,

Incorrect spelling of Mössbauer.

It was measured by Dr. Mössbauer,

I:23-9, par 3

This resonance curve turns out be be very interesting.

Incorrect word ('be' instead of 'to').

This resonance curve turns out to be very interesting.

I:31-10, Eq 31.25

$$2\alpha\overline{E_s E_a} = N \Delta z\, q_e\, \overline{E_s v} \tag{31.25}$$

Wrong sign. [Compare to Eq. 31.24.]

$$-2\alpha\overline{E_s E_a} = N \Delta z\, q_e\, \overline{E_s v} \tag{31.25}$$

I:31-10, Eq 31.26

$$E_a = \frac{N \Delta z q_e}{2\varepsilon_0 c}\, v(\text{ret by z/c}) \tag{31.26}$$

Wrong sign. [Compare to Eq. 30.19.]

$$E_a = -\frac{N \Delta z q_e}{2\varepsilon_0 c}\, v(\text{ret by z/c}) \tag{31.26}$$

I:32-7, par 2

The total amount of light energy per second, scattered in all directions by the single atom, is of course given by Eq. (32.7)

Incorrect reference (and missing period).

The total amount of light energy per second, scattered in all directions by the single atom, is of course given by Eq. (32.6).

I:45-4, par 2

When we stretch a rubber band, we find that its temperature falls,

Error in physics.

When we stretch a rubber band, we find that its temperature rises,

I:45-4, par 2

...we can calculate how much the force will increase in terms of the heat needed to keep the temperature constant when the band is stretched a little bit.

Error in physics.

...we can calculate how much the force will increase in terms of the heat needed to keep the temperature constant when the band is relaxed a little bit.

I:45-5, par 4

... with the following rules: $U \to H, P \to -V, V \to P$.

Wrong rules.

... with the following rules: $U \to H, P \to -V, \Delta V \leftrightarrow \Delta P$.

I:45-5, par 4

$$\left(\frac{\partial H}{\partial P}\right)_T = T\left(\frac{\partial V}{\partial T}\right)_P - V.$$

Wrong sign.

$$\left(\frac{\partial H}{\partial P}\right)_T = T\left(\frac{\partial V}{\partial T}\right)_P + V.$$

I:45-7, par 2

If we further assume that L is a constant, independent of temperature - not a very good approximation - then we would have $\partial P/\partial T = L/(RT^2 P)$.

Missing division sign.

If we further assume that L is a constant, independent of temperature - not a very good approximation - then we would have $\partial P/\partial T = L/(RT^2/P)$.

I:46-4, Eq 46.1

$$\begin{aligned}\omega &= (\theta/\tau)\ \ e^{-(\varepsilon + L\theta)/kT} - e^{-\varepsilon/kT} \\ &= (\theta/\tau)\ \ e^{-\varepsilon/kT}\left(e^{-L\theta/kT} - 1\right).\end{aligned} \tag{46.1}$$

Missing parentheses in first line.

$$\begin{aligned}\omega &= (\theta/\tau)\ \ \left(e^{-(\varepsilon + L\theta)/kT} - e^{-\varepsilon/kT}\right) \\ &= (\theta/\tau)\ \ e^{-\varepsilon/kT}\left(e^{-L\theta/kT} - 1\right).\end{aligned} \tag{46.1}$$

I:48-5, par 4

We know, of course, that we can represent a wave travelling in space by $e^{i(\omega t - kx)}$... In this case we can write it as $e^{ik(x-ct)}$,

Wrong sign in exponent.

We know, of course, that we can represent a wave travelling in space by $e^{i(\omega t - kx)}$... In this case we can write it as $e^{-ik(x-ct)}$,

I:49-5, par 1

$k_x a$ must be an integral multiple of π, and $k_x b$ must be another integral multiple of π.

Wrong subscript.

$k_x a$ must be an integral multiple of π, and $k_y b$ must be another integral multiple of π.

I:50-7, Eq 50.20

$$f(t) = \frac{4}{\pi}\left(\sin\frac{\pi}{2} + \frac{1}{3}\sin\frac{3\pi}{2}\ \frac{1}{5}\sin\frac{5\pi}{2} + \ldots \right) \qquad (50.20)$$

Missing addition sign.

$$f(t) = \frac{4}{\pi}\left(\sin\frac{\pi}{2} + \frac{1}{3}\sin\frac{3\pi}{2} + \frac{1}{5}\sin\frac{5\pi}{2} + \ldots \right) \qquad (50.20)$$

I:50-7, footnote

We integrate the series term by term (from zero to x) to obtain $\tan^{-1} x = 1 - x^3/3 + x^5/5 - x^7/7 + \ldots$

First term of series is integrated incorrectly.

We integrate the series term by term (from zero to x) to obtain $\tan^{-1} x = x - x^3/3 + x^5/5 - x^7/7 + \ldots$

I:52-8, par 4

That is possible because physical laws are not variant under change of scale, and therefore we *can* define an absolute length.

Transcription(?) error ("in/variant").

That is possible because physical laws are not invariant under change of scale, and therefore we *can* define an absolute length.