

Errata in the fifth edition of No Bullshit Guide to Math & Physics

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Mistakes to be fixed in v5.5

- **E2.1** The correct answers are **a)** $t_f = 16[\text{s}]$, $d = 960[\text{m}]$ and **b)** $t_f = 7[\text{s}]$, $d = 455[\text{m}]$.
- **P4.1** The correct answers to part (1) are $v_y(t) = v_{iy} - gt$ when the y -axis points up, and $v_y(t) = -v_{iy} + gt$ when the y -axis points down.
- **P5.13 (1)** The correct answer is $\frac{dw}{dx} = \frac{dw}{dv} \frac{dv}{du} \frac{du}{dx} = \frac{-2}{v^3} \cdot 3(1+2u) \cdot \frac{3}{2}x^2 = \frac{-9}{27} \frac{(1+x^3)x^2}{(\frac{1}{2}x^3 + \frac{1}{4}x^6)^3}$.
- **P5.55** The correct answer for the second part is $\frac{d^2r}{dx^2} + \frac{d^2r}{dy^2} + \frac{d^2r}{dz^2} = \frac{2}{r}$ and not $\frac{3}{r}$.
- The answers and solutions to the exercises from Chapter 3 were missing from Appendix A. Here a screenshot of the missing answers:

Answers to exercises

E3.1 a) $(4, 0)$. **b)** $(-2, -3)$. **c)** $(7, 3)$. **E3.2 a)** $\vec{v}_1 = (5\sqrt{3}, 5) = (8.66, 5)$. **b)** $\vec{v}_2 = (0, -12)$.
c) $\vec{v}_3 = (-2.95, 0.52)$. **E3.3 a)** $\vec{u}_1 = 4\angle 0^\circ$. **b)** $\vec{u}_2 = \sqrt{2}\angle 45^\circ$. **c)** $\vec{u}_3 = \sqrt{10}\angle 108.43^\circ$.

Mistakes fixed in v5.4

- **P2.10** Made problem statement consistent with graph to say “acceleration from $t = 0[\text{s}]$ to $t = 2[\text{s}]$ is ...” and not “acceleration from $t = 0[\text{s}]$ to $t = 3[\text{s}]$ is ...”
- **P4.40** The formula for determining Tarzan’s initial velocity is correct, but the numeric answer should be $v = 6.345[\text{m/s}]$ and not $v = 4.48[\text{m/s}]$ as given. With this new value of the initial velocity, the total distance travelled becomes $x_f = 2.85[\text{m}]$.
- **P4.41** The formula for $y(x)$ given in the answer key and the solution were wrong. The correct answer is $y(x) = \ell \sin\left(\theta_{\max} \cos\left(\omega \frac{x}{v}\right)\right) = \ell \sin\left(\theta_{\max} \cos\left(\frac{\sqrt{g}}{\sqrt{\ell v}} x\right)\right)$.

Mistakes fixed in v5.3

- **E1.16** The correct calculation is $\log(z) - \log(2z) = -\log(2)$, not $-\log(z)$. Instead of changing the answer I changed the question to match the answer: $\log(z) - \log(z^2) = -\log(z)$.

Mistakes fixed in v5.2

- Page 337, formula for integral of $\frac{1}{(x-\beta)^m}$ is $\frac{-1}{(m-1)(x-\beta)^{m-1}}$, not $\frac{1-m}{(x-\beta)^{m-1}}$.
- Page 337, formula for the integral of $\frac{1}{a} \int \frac{1}{y^2+k} dy$ is $\frac{1}{a\sqrt{k}} \tan^{-1}\left(\frac{y}{\sqrt{k}}\right)$, not $\frac{\sqrt{k}}{a} \tan^{-1}\left(\frac{y}{\sqrt{k}}\right)$.

Mistakes fixed in v5.1

- **P1.41:** Both calculations should use the radius instead of the diameter.
- **P1.44:** Answer should be $4 \sin 40 + \frac{1}{4}(2\pi(0.5)) + 4 \cos 40 + 2 = 8.42[\text{m}]$.
- **P1.47:** Answer should be $180 - 40 = 140$ degrees.
- **P1.51:** Question describes the water tank with dimensions $12 \times 6 \times 3$, but the solution uses $15 \times 6 \times 5$. The question was changed to match the existing solution: the water tank now has length 15[m] and height 5[m].
- **P2.9** part (3). v_f should be 6[m/s], not 10[m/s].
- **P2.10** part 4. Distance should be 13[m] not 14[m].
- Page 202, revolution of the Earth example. v_t should be 328.32[m/s] not 464.32[m/s], giving a final answer of 1181.95[km/h] not 1671.56[km/h].
- Page 264, section 5.5 Limit formulas. Removed formulas $\lim_{x \rightarrow 0} \frac{\ln(x+a)}{x} = a$, and $\lim_{x \rightarrow 0} (a^{1/x} - 1) = \ln(a)$.
- Page 286. Should be “Consider the point $P = (x_P, y_P)$ that lies on the circle $x^2 + y^2 = R^2$ ” with R^2 instead of just R .
- Page 401. Conversion for inches is 1[in] = 2.54[cm], not 1[T] = 1000[kg].

Please let me know if you find any other mistakes: ivan@minireference.com.