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

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Mistakes to be fixed in v5.5

• **P5.55** The correct answer for the second part is \( \frac{d^2x}{dt^2} + \frac{d^2y}{dy^2} + \frac{d^2z}{dz^2} = \frac{2}{r} \) and not \( \frac{3}{r} \).

• The answers and solutions to the exercises from Chapter 2 and Chapter 3 were missing from Appendix A. Here are one-stop-shop screenshots the missing pieces:

**Chapter 2 solutions**

**Answers to exercises**

E2.1 a) \( t_f = 20[s], d = 1400[m] \); b) \( t_f = 10[s], d = 800[m] \).

**Solutions to selected exercises**

E2.1 We can find \( t_f \) from the UAM velocity equation \( v_f = 100 = 5(t_f) + v_y \). We can then compute the total distance travelled using the UAM position equation: \( d = x(t_f) = 0 + v(t_f) + \frac{1}{2}a(t_f)^2 \).

**Chapter 3 solutions**

**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) \( \vec{v}_1 = 4\angle 0^\circ \), b) \( \vec{v}_2 = \sqrt{2}\angle 45^\circ \), c) \( \vec{v}_3 = \sqrt{10}\angle 108.43^\circ \).

Mistakes fixed in v5.4

• **P4.40** The formula for determining Tarzan’s initial velocity is correct, but the numeric answer should be \( v = 6.345[m/s] \) and not \( v = 4.48[m/s] \) as given. With this new value of the initial velocity, the total distance travelled becomes \( x_f = 2.85[m] \).

• **P4.41** The formula for \( y(x) \) given in the answer key and the solution were wrong. The correct answer is \( y(x) = \ell \sin(\theta_{\text{max}} \cos(\omega \frac{x}{v})) = \ell \sin(\theta_{\text{max}} \cos(\frac{\omega \vec{r}}{\sqrt{v}} x)) \).

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

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 \(15\text{[m]}\) and height \(5\text{[m]}\).
- P2.9 part (3). \(v_f\) should be \(6\text{[m/s]}\), not \(10\text{[m/s]}\).
- P2.10 part 4. Distance should be \(13\text{[m]}\) not \(14\text{[m]}\).
- Page 202, revolution of the Earth example. \(v_r\) should be \(328.32\text{[m/s]}\) not \(464.32\text{[m/s]}\), giving a final answer of \(1181.95\text{[km/h]}\) not \(1671.56\text{[km/h]}\).
- Page 264, section 5.5 Limit formulas. Removed formulas \(\lim_{x \to 0} \frac{\ln(x+a)}{x} = a\), and \(\lim_{x \to 0} (a^{1/x} - 1) = \ln(a)\).
- 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 \(1\text{[in]} = 2.54\text{[cm]}\), not \(1\text{[T]} = 1000\text{[kg]}\).

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