Errata Fundamentals of Physics Vol I Expanded Edition

Many thanks to Sunjiv Varsani and Alan Lu for their contributions.

1. Change “time dilatation” to “time dilation” everywhere
2. Page 5: Para 3: “..and at time \( t_2 \) ended..”
3. Page 28, last line: \( \mathbf{a}_{bg} = \mathbf{a}_{bp} \)
4. Page 436, Exercise 4.9: “.. \( v_{\text{max}} = \sqrt{2gh(1 + \frac{mgh}{2kh})} \)
5. Page 447, Exercise 2.9: need to use \( F = ma \), not discussed yet.
6. Page 447, Exercise 2.10: “.. point on a horizontal flywheel..”
7. Page 453 Exercise 3.22, line 6: “..keeping its energy \( E = mgh + \frac{1}{2}mv^2 \) constant.”
8. Page 467 Exercise 7.7 part (iii): “rod” should read “stick”
9. Page 468 Exercise 7.15: \( P = (\frac{E}{c}, p) \)
10. Page 469, Exercise 7.18 \( \theta(t) \approx \ln \frac{3Ft}{mc} \)
11. Page 470, Exercise 7.27, line 5: \( \omega = |\mathbf{k}| \)
12. Page 475 Exercise 8.34 penultimate line: “complimentary” should be “complementary”
13. Page 477 Exercise 9.26, line 1: \( m \to M \)
14. Page 477 Exercise 9.27 line 1: \( y = \pm 0.75 \)
15. Page 487, Exercise 1.3: (ii) \(-0.5s\)
16. Page 487, Exercise 1.5: \( 1 + \frac{3}{c} \)
17. Page 487, Exercise 1.8: (iii) \( \frac{(v_1 - v_2)^2}{2(v_1 + v_2)} \)
18. Page 487 Exercise 1.11: (i) \( 1.76m \) (ii) \( 7.92m \)
19. Page 488 Exercise 2.1: (ii) \( \theta = \tan^{-1}(4/3) \)
20. Page 490 Exercise 3.19: Exchange (i) and (ii)
21. Page 490 Exercise 3.31: \( 3mg \to 3Mg \)
22. Page 492, Exercise 5.21: \( 1.39s \)
23. Page 492, Exercise 6.4: (ii) \( (5/12)Ma^2 \)
24. Page 493, Exercise 6.34: (ii) \( m \leftrightarrow M \)
25. Page 493, Exercise 6.35 (i) Units Newtons (ii) \( 625\sqrt{3}\mathbf{i} + 1125\mathbf{j} \)
26. Page 494, Exercise 7.13: 17.2 years

27. Page 495, Exercise 7.31: \( M = 10.72 \text{ GeV}/c^2 \)

28. Page 496 Exercise 8.22 (i) 2.8s

29. Page 496, Exercise 8.34 (ii) \( x(t) = 0.103 \cos(16t - 2.98) \) (Use \( \tan \theta = \tan(\theta + \pi) \))

30. page 505 Index item: “complimentary” should be “complementary”