

1. 4 (Weight is a vector) (Skill 20)
2. 2 (Mass doesn't change with position in gravity) (Skill 20, 26)
3. 4 (Net force of zero means - not speeding up, slowing down, changing direction) (Skill 20)
4. 1 (Inertia is mass) (Skill 20)
5. 3 (Newton's 3rd Law) (Skill 20)
6. 2 (Sound is longitudinal & Mechanical) (Skill 50)
7. 2 ($F_e = \frac{kq_1q_2}{r^2}$) (Skill 35)
8. 1 (Momentum is a vector direction matters, total $p_{\text{before}} = p_{\text{after}}$) (Skill 27)
9. 2 (Friction opposes motion) (Skill 22, 23)
10. 3 (Charged particles in motion cause magnetic fields) (Skill 46)
11. 3 (Field lines go away from + and toward -) (Skill 36)
12. 2 ($W = Fd$) (Skill 28)
13. 2 (Work on a horizontal frictionless surface is equal to KE) (Skill 29)
14. 2 ($PE = mgh$ PE is directly related to m) (Skill 29, 19)
15. 3 ($KE = \frac{1}{2}mv^2$) (Skill 28)
16. 1 ($n = \frac{c}{v}$) n is inverse to v "v depends on medium" (Skill 51, 19)
17. 3 ($P = \frac{W}{t}$) (Skill 30)
18. 3 ($P = Fv$) (Skill 30)
19. 4 (Doppler Effect) (Skill 54)
20. 1 (Waves carry energy not mass) (Skill 48)
21. 3 (Period is equal to $\frac{\text{seconds}}{\text{cycle}}$) (Skill 48)
22. 4 (A current carrying wire creates a magnetic field due to motion of charge) (Skill 46)
23. 2 ($\frac{n_2}{n_1} = \frac{\lambda_1}{\lambda_2}$) (Skill 56)
24. 1 (Loudness of sound is related to amplitude) (Skill 50)
25. (Force is uniform between parallel plates, opposite direction for + or -) (Skill 35, 36)

26. 1 (Interference occurs when 2 waves are in the same place at same time) (Skill 53)
27. 3 (EAM Spectrum E is direct to f λ is inverse to f) (Skill 57)
28. 1 (Neutrinos are leptons) (Skill 47)
29. 3 (Neutral baryon is 1 from top row and 2 from bottom) (Skill 47)
30. 2 ($E=mc^2$) (Skill 58)
31. 2 ($v_f = v_i + at$) a is negative (Skill 12 & 13)
32. 4 ($W=qV$ with q in elementary charge answer in eV) (Skill 37)
33. 3 (Series circuits have higher R_{eq} than parallel) (Skill 43, 44)
34. 3 (for transverse waves motion of particle is perpendicular & follows crests or troughs) (Skill 50 & 51)
35. 4 (Magnetic field lines go away from north) (Skill 46)
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36. 2 (metric estimation) 10^{-2} = centimeter (Skill 1-3)
37. 4 (graph of v vs t for a falling object) (Skill 14)
38. 4 ($W = \frac{1}{2} I \omega^2$ convert t from minutes to seconds) (Skill 41)
39. 3 ($F_{g\perp} = F_g \cos \theta$) (Skill 22)
40. 2 (graph of positive velocity - negative acceleration) (Skill 13)
moving away getting slower 
41. 3 ★ (2 cars moving at different speed. Find intersection of position) (Skill 9)
42. 2 ($q = It$ I in milliamps) (Skill 38)
43. 1 ($J = Ft = m\Delta v$) (Skill 20)
44. 1 (Graph V vs I for constant R) (Skill 40, 19)
45. 4 ($R = \frac{\rho L}{A}$ L is direct, A is inverse) (Skill 39, 19)
46. 1 (Temperature cause R to increase, I & R are inverse) (Skill 39)
47. 2 (Greatest diffraction is large wavelength with small opening) (Skill 52)
48. 3 ($f = \frac{v}{\lambda}$) (Skill 48, 50)
49. 3 (Antinodes are a point of max & constructive interference) (Skill 53)
50. 3 (Voltmeters in parallel) (Skill 42 & 43)