

AP Physics C Mechanics Outline

| Topic | Classwork | Homework |
|--|---|--|
| 1-d kinematics: equations + graphs | MC 1998 # 3 HRW6 p. 28 21P | |
| 2-d kinematics and vector calculus | MC 1998 # 29 HRW6 p. 67 11E, 13P | MC 1998 # 2, 26 |
| Forces | MC 1998 # 4 | |
| Calculus: Exponential functions | Cribsheet: Logs and exponentials Hand draw plot of derivative for e^x Stewart p. 426 # 30, 36 | Stewart p. 426 # 29, 39 |
| Calculus: Logarithmic functions Hand draw derivative function for $\ln x $ | Stewart p. 443 # 8, 20; 68 | Stewart p. 443 # 7, 11; 69 |
| Calculus: u -substitution | Cribsheet: FToC Stewart p. 428 # 72 Stewart p. 443 # 67 | Stewart p. 428 # 75 Stewart p. 443 # 71 |
| Drag forces | FRQ 2008 M1 | FRQ 2010 M1 |
| Forces with circular motion | | FRQ 2005 M2 MC 1998 # 25 |
| Impulse/momentum | MC 1998 # 31 Rocket problem | FRQ 1997 M2 |
| Center of mass (1) 6.1 Center of mass cribsheet 6.2 Mass-averaging over continuous mass distributions | HRW6 p. 188 5E, 15P | HRW6 p. 189 12E (The net force on the balloon-people system is zero) |
| Work/energy/potential energy, springs 2.1 Vectors for AP Phy C: \cdot product 7.1.2 Work done along a path (1) 5.0 Newt 2 can be re-expressed Adapt for two masses gravitationally attracted 7.2.2 Potential energy landscapes (1) 3.3 Spring force (1) 7.2.1 Potential energy | FRQ 2002 M3 | FRQ 2008 M3 FRQ 2009 M1 MC 1998 # 16, 17; 27 |
| Rotational 2.1 Vectors for AP Phy C: \times product 8.1 Rotational kinematics and dynamics cribsheet 8.2 Torque concept | MC 1998 # 30 FRQ 1999 M3 | FRQ 2004 M2 FRQ 2013 M3 |
| SHM 10.1 SHM Graphs 10.2 SHM cribsheet 10.3 SHM Ignoring gravity | FRQ 1999 M2 FRQ 2009 M2 | FRQ 2011 M3 FRQ 2000 M1 |