All problems are from Taylor, *Classical Mechanics*.

1) Problem 9.2  Artificial gravity on a space station
2) Problem 9.7  Time derivative of vector in rotating frame
3) Problem 9.9  Coriolis force
4) Problem 9.14  Surface profile of water in a rotating bucket
5) Problem 9.19  Circular motion with different initial conditions
6) Problem 9.20  Spiral motion *[Hint: see Section 5.4- Critical Damping for the 2nd solution to the diff. eq.]*
7) Problem 9.28  Coriolis effect and shell trajectories
8) Problem 9.33  Foucault pendulum initial condition
9) Problem 6.1  Geodesic on a sphere
10) Problem 6.4  Snell’s law *[Hint: the time for light to traverse each path is the path length divided by the speed of light v = c/n]*

Extra Credit

1) Problem 6.24  An optical “cloaking device”