

Physics 300
Problem set #5

1: How does the water in a spinning bucket arrange itself, given that its surface must be perpendicular to the force that holds the water? Utilize a non-inertial reference frame to find the relevant forces.

2: What is the magnitude of the Coriolis force on a 50 kg artillery shell fired due East at 45 degrees N latitude at 200 m/s, 45 degrees to the horizontal? Approximate how far the shell will miss its target if this is not accounted for.