Name: Period:

Forces in One Dimension 2- It's Personal!
Show all work including the equations and substitution with units.
$$g = 9.81m/s^2$$

1. A large motorcycle weight 2450N. Find its mass in kilograms.

2. Your car changes its speed from 10 to 20m/s during a 10-second interval. Find the net force on your car during this interval.

3. You and a 40kg girl engage in a tug of war on an icy frictionless surface. If your acceleration is $3.0m/s^2$, find the magnitude of the acceleration of the girl towards you.

4 An astronaut with the same mass as you is standing on a scale in a spaceship. When the ship moves in a straight line from the surface of the planet with a constant velocity of 100m/s, the scale reads 300N. If the ship accelerates from the surface of the planet at $7.0m/s^2$, what would the scale read now?