Apparent Weight Examples

- A person has mass 50 kg. What is their apparent weight when they are riding on an elevator $N = m(g+a)$

1. Going up with constant speed 9.8 m/s

   $a = 0$ so $N = mg = 490$ Newtons

2. Going down with constant speed 9.8 m/s

   $a = 0$ so $N = mg = 490$ Newtons

3. Accelerating up at a rate of 9.8 m/s^2

   $a = +9.8$ m/s so $N = 2\,mg = 980$ Newtons

4. Accelerating down at a rate of 9.8 m/s^2

   $a = -9.8$ m/s so $N = 0\,mg = 0$ Newtons