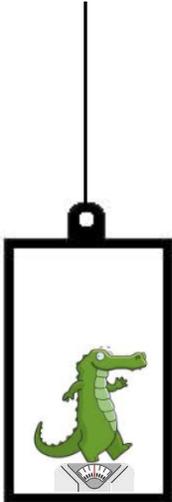




Elevator Problems

Consider **Alpha the Alligator** standing on a Newton scale inside of an elevator. His mass is set at 120 kg. Analyze each of the situations below using F.B.D.s.



- a) Calculate the reading on the scale (Normal force) when the elevator is at **rest**.



- b) Calculate the reading on the scale when the elevator is **moving upwards** at a **constant speed**.



- c) Calculate the reading on the scale when the elevator is **moving downwards** at a **constant speed**.



d) Calculate the reading on the scale when the elevator is **accelerating upwards** at a rate of 3.0 m/s/s .



e) Calculate the reading on the scale when the elevator is **accelerating downwards** at a rate of 3.0 m/s/s .



Try This:

Calculate the acceleration of elevator if the reading on the scale is 65 N . Which direction is the elevator accelerating?

