

An elevator accelerates upward at 3m/s^2 for a brief time. a 500 N women standing on bathroom scales notices the reading is not what she expected. What do the scales read?

Answer:

Such as the weight is: $P = mg$ the acceleration of elevator is added to acceleration of free falling and the scales read the weight: $P = m(g + a)$ were a – acceleration of elevator.

$$m = \frac{P}{g} = \frac{500}{9.8} = 51\text{ kg}$$

The weight reading the scales on elevator is: $P = m(g + a) = 51 * (9.8 + 3) = 652.8\text{ N}$