

a) $m = 210 \text{ kg}$
 $g = 9.8 \text{ m/s}^2$ (on Earth)

$$W = m \cdot g$$
$$= (210 \text{ kg}) \times (9.8 \text{ m/s}^2)$$

$$W = 2058 \text{ N}$$

b) m is constant

$$m = 210 \text{ kg}$$

c) $W = 2058 \text{ N}$ (weight lifted should be equal to Earth)

$$g_{\text{moon}} = 9.8 \text{ m/s}^2 \div 6 = 1.63 \text{ m/s}^2$$

$$W = m \cdot g$$

$$2058 \text{ N} = m \cdot (1.63 \text{ m/s}^2)$$

$$m = 1260 \text{ kg}$$