Weight on the moon

A woman has a mass of 55.0 kg.

(a) What is her weight on earth?

(b) What are her mass and her weight on the moon, where $g = 1.62\ ms^{-2}$?

Solution:

(a) On earth

$$W = m\ g = 55.0 \times 9.8 = 539\ N$$

(b) On moon, her mass remains the same, but the acceleration due to gravity is different, so

$$W = m\ g_m = 55.0 \times 1.62 = 89.1\ N$$