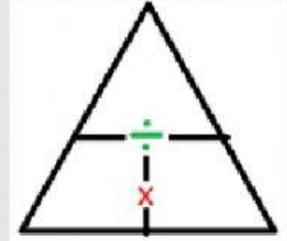## WEIGHT AND MASS CALCULATIONS

Mass can be used to calculate weight using the following equation:
WEIGHT = MASS X ACCELERATION DUE TO GRAVITY
$$W = m \times g$$

The unit of measurement for Weight is <u>N</u> (Newton), for mass it is <u>kg</u> and acceleration due to gravity is <u>ms^{-2}</u>.

Complete the triangle to the right using W, m and *g*.
(Remember to put in the equation, plug in the numbers, then the answer with units.)

<u>Answers to I decimal place where applicable.</u>

A	B	C	D
m = 20kg g = 34 m/s² _____ N	m = 11kg g = 3 m/s² _____ N	m = 45kg g = 9 m/s² _____ N	m= 89 kg g = 12m/s² _____ N

1a. Calculate the weight of a man of 250kg on planet Zinkle where the gravity is $67ms^{-2}$.

Weight = _____   X   _____

= _____ kg x _____ ms^{-2}

= _____ N

b. Calculate the weight of a man of 345 kg on planet Dorfler where the gravity is $4.2ms^{-2}$.

Weight = _____   X   _____

= _____ kg x _____ ms^{-2}

= _____ N

c. Calculate the weight of a man of on a moon which has a gravitational pull of 19.34 ms⁻² if his mass is 56kg.

Weight = _____ X _____

= _____ kg x _____ ms⁻²

= _____ N