

Health Science Pathway

Module 4: Measurements, Units and Chemistry Calculations for Health Science

1. A woman's height is measured to be 5 feet 4 inches and her weight is measured as 120 pounds. Calculate her BMI.

Answer: 5 feet 4 inches = 64 inches = (64 x 2.54) cm = 162.56 cm = 1.6256 m

$$120 \text{ pounds} = 120 \times 0.4536 = 54.432 \text{ kg}$$

$$\text{Therefore BMI} = \frac{W}{h^2}$$

$$= \frac{54.432}{1.6256^2}$$

$$= 20.6 \text{ (to one decimal place)}$$

2. Calculate the RMR for a teenage girl of body mass 60 kg and height 174 cm and age 15 years.

Answer: RMR = (10 x 60) + (6.25 x 174) – (5 x 15) – 161

$$= 600 + 1087.5 - 75 - 161$$

$$= 1451.5 \text{ kilocalories}$$

$$= 1451.5 \times 4.18 \text{ kilojoules}$$

$$= 6067.3 \text{ kJ per day}$$