Exercise 62

A woman's basketball has a circumference between 28.5 and 29.0 inches and a maximum weight of 20 ounces (two significant figures). What are these specifications in units of centimeters and grams?

Solution

Multiply by the appropriate conversion factors to change to the desired units.

$$28.5 \text{ in} = 28.5 \text{ in} \times \frac{2.54 \text{ cm}}{1 \text{ in}} \approx 72.4 \text{ cm}$$

$$29.0 \text{ in} = 29.0 \text{ in} \times \frac{2.54 \text{ cm}}{1 \text{ in}} \approx 73.7 \text{ cm}$$

$$20. \text{ oz} = 20. \text{ oz} \times \frac{28.349 \text{ g}}{1 \text{ oz}} \approx 5.7 \times 10^2 \text{ g}$$