

All work must be shown to receive credit.

1. (5 points) Use dimensional analysis to determine the number of dimes that are equal to 45 quarters.

$$? \text{ dimes} = 45 \text{ quarters} \times \frac{5 \text{ nickels}}{1 \text{ quarter}} \times \frac{1 \text{ dime}}{2 \text{ nickels}} = 112 \text{ dimes}$$

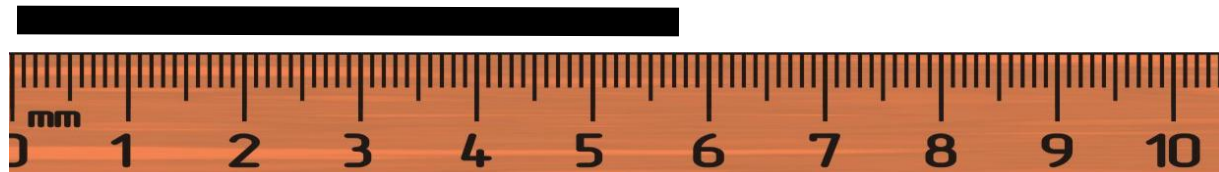
2. (5 points) A tree is 65.3 feet tall. How tall is the tree in meters?

$$? \text{ m} = 65.3 \text{ ft} \times \frac{12 \text{ in}}{1 \text{ ft}} \times \frac{2.54 \text{ cm}}{1 \text{ in}} \times \frac{1 \text{ m}}{100 \text{ cm}} = 19.9 \text{ m}$$

3. (5 points) My dog has a mass of 35.4 kg. How many mg does my dog weigh?

$$? \text{ mg} = 35.4 \text{ kg} \times \frac{1000 \text{ g}}{1 \text{ kg}} \times \frac{1000 \text{ mg}}{1 \text{ g}} = 3.54 \times 10^7 \text{ mg}$$

4. (5 points) The ruler below is calibrated to measure centimeters. How long is the line in cm?  
5.71 cm



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1. (5 points) Use dimensional analysis to determine the number of dimes that are equal to 65 quarters.

$$? \text{ dimes} = 65 \text{ quarters} \times \frac{5 \text{ nickels}}{1 \text{ quarter}} \times \frac{1 \text{ dime}}{2 \text{ nickels}} = 162 \text{ dimes}$$

2. (5 points) A tree is 52.8 feet tall. How tall is the tree in meters?

$$? \text{ m} = 52.8 \text{ ft} \times \frac{12 \text{ in}}{1 \text{ ft}} \times \frac{2.54 \text{ cm}}{1 \text{ in}} \times \frac{1 \text{ m}}{100 \text{ cm}} = 16.1 \text{ m}$$

3. (5 points) My dog has a mass of 26.4 kg. How many mg does my dog weigh?

$$? \text{ mg} = 26.4 \text{ kg} \times \frac{1000 \text{ g}}{1 \text{ kg}} \times \frac{1000 \text{ mg}}{1 \text{ g}} = 2.64 \times 10^7 \text{ mg}$$

4. (5 points) The ruler below is calibrated to measure centimeters. How long is the line in cm? 7.22 cm

