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$$\frac{1/5}{m} = \frac{W}{g} = \frac{1000}{32.2} = \underline{31.1 \text{ slugs}}$$

$$m = 31.1 \text{ slugs} \left( \frac{14.594 \text{ kg}}{\text{slug}} \right) = \underline{453 \text{ kg}}$$