20. (a) # of dollars = $90.0 \text{ kg} \times \frac{\$9.80}{10 \text{ kg}} =$ **$88.20**

(b) # of dollars = $6.00 \text{ t} \times \frac{1 \cdot 10^3 \text{ kg}}{1 \text{ t}} \times \frac{\$9.80}{10 \text{ kg}} =$ **$5880.00**

21. (a) # of centimetres = $20.0 \text{ inch} \times \frac{2.54 \text{ cm}}{1 \text{ inch}} =$ **50.8 cm**

(b) # of metres = $36 \text{ inch} \times \frac{2.54 \text{ cm}}{1 \text{ inch}} \times \frac{1 \cdot 10^{-2} \text{ m}}{1 \text{ cm}} =$ **0.914 m**

22. # of centigrams = $90 \ \mu\text{g} \times \frac{1 \cdot 10^{-6} \text{ g}}{1 \ \mu\text{g}} \times \frac{1 \text{ cg}}{1 \cdot 10^{-2} \text{ g}} =$ **9×10^{-3} cg**

23. (a) # of hours = $450 \text{ km} \times \frac{1 \text{ h}}{105 \text{ km}} =$ **4.3 h**

(b) # of seconds = $2.0 \times 10^2 \text{ m} \times \frac{1 \text{ km}}{10^3 \text{ m}} \times \frac{1 \text{ h}}{105 \text{ km}} \times \frac{60 \text{ min}}{1 \text{ h}} \times \frac{60 \text{ s}}{1 \text{ min}} =$ **6.9 s**

(c) # of kilometres = $10.0 \text{ min} \times \frac{1 \text{ h}}{60 \text{ min}} \times \frac{105 \text{ km}}{1 \text{ h}} =$ **17.5 km**

(d) # of centimetres = $1.00 \text{ ms} \times \frac{1 \cdot 10^{-3} \text{ s}}{1 \text{ ms}} \times \frac{1 \text{ min}}{60 \text{ s}} \times \frac{1 \text{ h}}{60 \text{ min}} \times \frac{105 \text{ km}}{1 \text{ h}} \times \frac{1 \cdot 10^3 \text{ m}}{1 \text{ km}} \times \frac{1 \text{ cm}}{1 \cdot 10^{-2} \text{ m}} =$ **2.92 cm**

24. (a) # of kilograms = $7.00 \text{ L} \times \frac{5.50 \text{ kg}}{1 \text{ L}} =$ **38.5 kg**

(b) # of litres = $22 \text{ kg} \times \frac{1 \text{ L}}{5.50 \text{ kg}} =$ **4.0 L**

(c) # of grams = $5.00 \text{ mL} \times \frac{1 \cdot 10^{-3} \text{ L}}{1 \text{ mL}} \times \frac{5.50 \text{ kg}}{1 \text{ L}} \times \frac{1 \cdot 10^3 \text{ g}}{1 \text{ kg}} =$ **27.5 g**

25. (a) # of grams = $10.0 \text{ kJ} \times \frac{1.00 \text{ g}}{0.334 \text{ kJ}} =$ **29.9 g**

(b) # of kilojoules = $50.0 \text{ g} \times \frac{0.334 \text{ kJ}}{1.00 \text{ g}} =$ **16.7 kJ**

(c) # of joules = $2.00 \text{ kg} \times \frac{1 \cdot 10^3 \text{ g}}{1 \text{ kg}} \times \frac{0.334 \text{ kJ}}{1.00 \text{ g}} \times \frac{1000 \text{ J}}{\text{kJ}} =$ **6.68×10^5 J**

26. # of micrograms = $80\ \text{Mg} \times \frac{1 \cdot 10^{6}\ \text{g}}{1\ \text{Mg}} \times \frac{1\ \mu\text{g}}{1 \cdot 10^{-6}\ \text{g}} = \boxed{8 \times 10^{13}\ \mu\text{g}}$

27. # of $\frac{\text{kilolitres}}{\text{second}} = \frac{2\ \text{cL}}{\text{ms}} \times \frac{1 \cdot 10^{-2}\ \text{L}}{1\ \text{cL}} \times \frac{1\ \text{kL}}{1 \cdot 10^{3}\ \text{L}} \times \frac{1\ \text{ms}}{1 \cdot 10^{-3}\ \text{s}} = \boxed{2 \times 10^{-2}\ \frac{\text{kL}}{\text{s}}}$

28. # of $\frac{\text{microlitres}}{\text{second}} = \frac{50.0\ \text{mL}}{\text{min}} \times \frac{1 \cdot 10^{-3}\ \text{L}}{1\ \text{mL}} \times \frac{1\ \mu\text{L}}{1 \cdot 10^{-6}\ \text{L}} \times \frac{1\ \text{min}}{60\ \text{s}} = \boxed{833\ \frac{\mu\text{L}}{\text{s}}}$