

AP WORKSHEET 00B: ANSWERS

1.

(a) $\left(\frac{120 \text{ J}}{1}\right)\left(\frac{1 \text{ MJ}}{1 \times 10^6 \text{ J}}\right) = 1.2 \times 10^{-4} \text{ MJ}$

(b) $\left(\frac{3 \text{ m}}{1}\right)\left(\frac{100 \text{ cm}}{1 \text{ m}}\right) = 300 \text{ cm}$

(c) $\left(\frac{400 \text{ miles}}{1}\right)\left(\frac{1.61 \text{ km}}{1 \text{ mile}}\right) = 644 \text{ km}$

(d) $\left(\frac{25 \text{ hectares}}{1}\right)\left(\frac{2.47 \text{ acres}}{1 \text{ hectare}}\right) = 61.75 \text{ acres}$

(e) $\left(\frac{34 \text{ inches}}{1}\right)\left(\frac{0.0833 \text{ ft}}{1 \text{ inch}}\right) = 2.83 \text{ ft}$

(f) $\left(\frac{289 \text{ s}}{1}\right)\left(\frac{2.78 \times 10^{-4} \text{ hrs}}{1 \text{ s}}\right) = 0.08 \text{ hrs}$

2.

(a) 120 kJ

(b) 28.66 lbs

(c) -189.95 °C

(d) 2.88 x 10⁶ ms

(e) 1.11 °C

(f) 29.1 lbs

3.

(a) $\left(\frac{679 \text{ nm}}{1}\right)\left(\frac{1 \times 10^{-9} \text{ m}}{1 \text{ nm}}\right)\left(\frac{100 \text{ cm}}{1 \text{ m}}\right) = 6.79 \times 10^{-5} \text{ cm}$

(b) $\left(\frac{23 \text{ miles}}{1}\right)\left(\frac{1.61 \text{ km}}{1 \text{ mile}}\right)\left(\frac{1000 \text{ m}}{1 \text{ km}}\right) = 37030 \text{ m}$

(c) $\left(\frac{567 \text{ ft}}{1}\right)\left(\frac{0.333 \text{ yd}}{1 \text{ ft}}\right)\left(\frac{0.914 \text{ m}}{1 \text{ yd}}\right) = 172.6 \text{ m}$

(d) $\left(\frac{12 \text{ L}}{1}\right)\left(\frac{1000 \text{ mL}}{1 \text{ L}}\right)\left(\frac{2.2 \times 10^{-4} \text{ UK gal}}{1 \text{ mL}}\right) = 2.64 \text{ UK gal}$

(e) $\left(\frac{8 \text{ MJ}}{1}\right)\left(\frac{1000 \text{ kJ}}{1 \text{ MJ}}\right)\left(\frac{1000 \text{ J}}{1 \text{ kJ}}\right) = 8.0 \times 10^6 \text{ J}$

(f) $\left(\frac{418 \text{ s}}{1}\right)\left(\frac{0.0167 \text{ min}}{1 \text{ s}}\right)\left(\frac{0.0167 \text{ hrs}}{1 \text{ min}}\right) = 0.117 \text{ hrs}$