

Assignment 1 – Physics DVHS

Answer questions on a separate page. Show your work for every question and ensure your final answers are in the appropriate amount of significant figures (when applicable).

1. Convert the following quantities:
 - a. $1876002\ \mu\text{m}$ to km
 - b. $1.23 \times 10^5\ \text{ng}$ to mg
 - c. $0.00084\ \text{Mg}$ to g
2. Identify the number of significant figures:
 - a. 102.45
 - b. 0.0008
 - c. 0.00080
 - d. 0.000808
 - e. 800
 - f. 8.00×10^2
 - g. 9.80
 - h. 801
3. A student takes a 20.0 minute shower every day. His showerhead pumps out 454.25 litres of water every hour. How many litres of water does this student use in one year?
4. What scalar quantities are measured by a car's odometer and speedometer?
5. Assume that the backwards running marathon record is 3 h 53 min 17 s. Determine the average speed of this 42.2 km race. Express your answer in both metres per second and kilometres per hour.
6. A dog, initially at a position 2.8 m west of its owner, runs to retrieve a stick that is 12.6 m east of its owner. What displacement does the dog need in order to reach the stick?