Science 10 Physics

2.1 Practice Assignment

Rounding, Significant Digits, Scientific Notation, Metric Conversion and Dimensional Analysis

A) Rounding – round to number indicated

Value	Round to nearest whole number, tenth or hundredth	Rounded Answer
0.1495	Nearest hundredth	
29.95	Nearest tenth	
139.49	(Nearest whole number	
80.46	Nearest tenth	
5.89	Nearest whole number	
3.047	Nearest hundredth	

B) Significant Digits – Count significant digits.

Number	Number of Significant Digits
12.42	
0.01407	
10.0	
54.60	
3.04	
3.0×10^{3}	
5.78×10^{-6}	

C) Scientific Notation - Convert the following to Scientific Notation

Value	# of Significant Digits	Scientific Notation
0.00706	2	
400000	3	
43.059	3	
0.00349	1	
0.000062	2	
5400000	2	
6.7	1	

D) Metric Conversion - Complete the following conversions.



E) Dimensional Analysis – Complete the following conversions. Show all the steps. (ONLY completed by students planning to take Physics 20)

a) 1 year \rightarrow minutes

2.2 Scalars and Vectors

1. Most of the quantities used to describe motion can be categorized as either *vectors or scalars*. A *vector* is a quantity that is fully described by both magnitude and direction. A *scalar* is a quantity that is fully described by magnitude alone. Categorize the following quantities by placing them under one of the two column headings.

Vectors	Scalars

displacement, distance, speed, velocity, acceleration

a. A quantity that is ignorant of direction is referred to as a ______.

b. A quantity that is conscious of direction is referred to as a ______.

3. True or False: An object can be moving for 10 seconds and still have zero displacement.

4. If the above statement is true, then describe an example of such a motion. If the above statement is false, then explain why it is false.

5. Suppose that you run along three different paths from location A to location B. Along which path(s) would your distance traveled be different than your displacement?



6. You run from your house to a friend's house that is 3 miles away. You then walk home.



b. What was the displacement for the entire trip?

7. Observe the diagram below. A person starts at A, walks along the bold path and finishes at B. Each square is 1 km along its edge. Use the diagram in answering the next two questions.

a. This person walks a distance of _____ km.

b. This person has a displacement of ______.

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