

Name: _____

Class: _____

Due Date: _____

Physics Topic 1C Math – Metric Multipliers and Unit Conversions

Part 1: Complete the following table on metric multipliers. The solutions to this worksheet can be found on the YouTube channel Go Physics Go.

Prefix	Abbreviation	Value
peta		
tera		
giga		
mega		
kilo		
hecto		
deca		
deci		
centi		
milli		
micro		
nano		
pico		
femto		

Part 2: Convert the units. The solutions to this worksheet can be found on the YouTube channel Go Physics Go.

1. E: Determine the number of Hz in 3.50 GHz.

2. E: Determine the number of m in 40.0 cm.

3. E: Determine the number of m in 3.40 km.

4. E: A man has a mass of 80.0 kg. What is the mass of the man in pounds? One pound is equivalent to approximately 0.454 kg. Show all your work and place a box around your answer.

5. E: How many seconds are in 70.0 years? Show all your work and place a box around your answer.

6. E: In 2009 Usain Bolt ran 100. m in a record time of 9.58 s. If he continues to run at this constant rate then how many meters will he run in one day? Show all your work and place a box around your answer.

7. E: In 2018 Eliud Kipchoge ran a marathon (42.195 km) in a record time of 2:01:39. If he continues to run at this constant rate then how many meters will he run in two days? Give your solution to three significant figures. Show all your work and place a box around your answer.

8. E: The circumference of the Earth is about 40,075.017 km from the Equator. What is the circumference of the Earth in inches? There are approximately 39.370 inches in one meter. Give your solution to three significant figures. Show all your work and place a box around your answer.

9. E: The surface area of Earth is about 510,064,472 square kilometers. What is the surface area of the Earth in square inches? There are approximately 39.370 inches in one meter. Give your solution to three significant figures. Show all your work and place a box around your answer.

10. E: The volume of Earth is about 1,083,206,916,846 cubic kilometers. What is the volume of Earth in cubic inches? There are approximately 39.370 inches in one meter. Give your solution to three significant figures. Show all your work and place a box around your answer.

11. E: The speed of light is 299,792,458 m/s. What is the distance, in kilometers, light travels in one year? Give your solution to three significant figures. Show all your work and place a box around your answer.

12. E: The density of gold is 19.32 grams per cubic centimeters. What is the density of gold in kilograms per cubic meters? Give your solution to three significant figures. Show all your work and place a box around your answer.

13. E: The density of gold is 19.32 grams per cubic centimeters. What is the density of gold in pounds per cubic feet? There is approximately 0.454 kg in one pound. There is approximately 0.305 meters in one foot. Give your solution to three significant figures. Show all your work and place a box around your answer.

14. E: A man drinks 60.0 liters of water in a 30.0 day month. On average how many cubic meters of water does he drink per hour? There are 1,000 liters of water in one cubic meter. Give your solution to three significant figures. Show all your work and place a box around your answer.