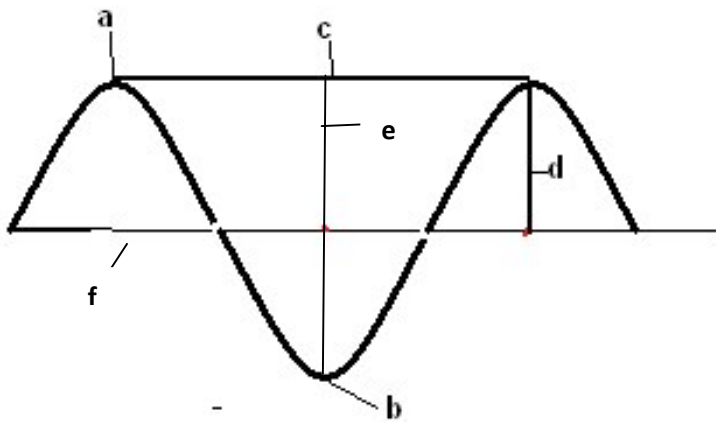


Waves & Tidal Patterns Practice

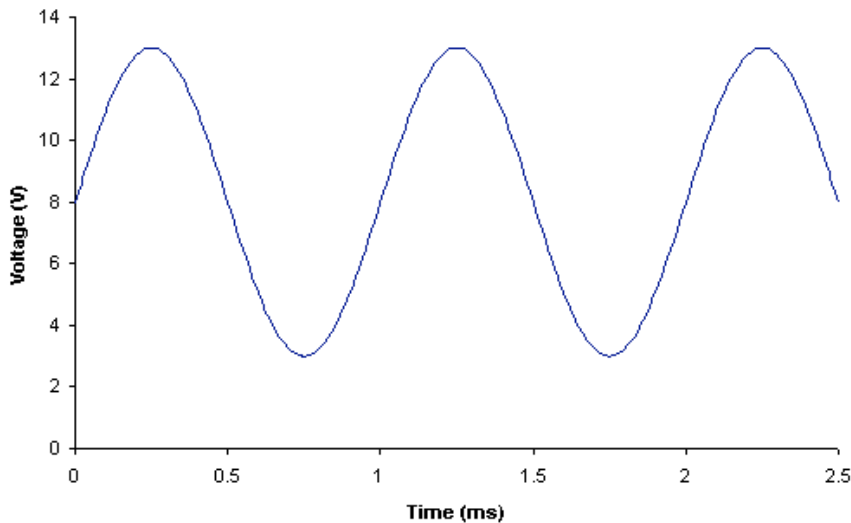
Name: _____

Part I: Match the following components of a wave with the correct terms provided:



- A: _____ Zero Line
- B: _____ Wave-length
- C: _____ Wave-height
- D: _____ Crest
- E: _____ Amplitude
- F: _____ Trough

Part II: Using a ruler, measure and record the wave-length, amplitude, and wave-height of each wave shown below. Record all measurements in centimeters (cm). (1 cm = 10 mm)



Wave-Length = _____ cm
 Amplitude = _____ cm
 Wave-Height = _____ cm

Part III: Create and analyze a tidal record graph.

Background:

Differences in topography and latitude cause three different daily tide cycles. Areas with ***semidiurnal cycles*** experience two high tides and two low tides per day (24hrs). Areas with ***mixed cycles*** have two high tides and two low tides per day, but are usually unequal. Areas with ***diurnal cycles*** have one high tide and one low tide per day (24hrs).

Earth's tidal bulges are always aligned with the moon. Because of the orbital motion of the moon, Earth's rotational period relative to the moon-tidal day is 24 hours and 50 minutes. This means that the tidal pattern observed at a given location repeats every 24 hours and 50 minutes, and that specific tidal phase, such as a high tide, occurs 50 minutes later on the following day.

The water levels in the data table below were recorded over a 24-hour period

Time (hours)	Water Level (meters)	Time (hours)	Water Level (meters)
00:00	3.08	13:00	2.78
01:00	3.35	14:00	2.81
02:00	3.33	15:00	2.59
03:00	3.03	16:00	2.16
04:00	2.53	17:00	1.64
05:00	1.95	18:00	1.15
06:00	1.44	19:00	0.84
07:00	1.10	20:00	0.78
08:00	1.02	21:00	1.00
09:00	1.21	22:00	1.46
10:00	1.59	23:00	2.07
11:00	2.07	24:00	2.67
12:00	2.51	-----	-----

*** Create a **LINE GRAPH** illustrating the data table above. Provide a **TITLE** for the graph and then label the x-axis "time (hours)" and y-axis "water level (meters)".

Part IV: Answer the following questions based on the data and graph.

1. **CIRCLE** and **LABEL** the estimated **high** and **low** tide(s) on your graph. Write the approximate time(s) and water level(s) of the high tides and low tides below. **NOTE:** *There may be more than one high tide and low tide.*

High tide(s) at: Time(s): _____ Water Level(s): _____

Low tide(s) at: Time(s): _____ Water Level(s): _____

2. Which of the three types of tide cycles does the data table and your graph portray? How do you know? **Explain.**
3. Predict the water level (meters) at the next **high** tide. **EXPLAIN** how you came to this conclusion.
4. Predict the time (hour) at which the next **high** tide will occur. **EXPLAIN** how you came to this conclusion.
5. **DESCRIBE** and **EXPLAIN** two (2) various factors that affect tidal patterns?

