In-Class Tidal Heights and Currents Exercise KEY

1) Look at the pages that show the tides for Seattle during June 2009.

2) Fill in the tide tables below for Seattle on June 24, 2009.

Date	Tidal stage	Time (PST/<u>PDT</u>)	Height (ft)
6/24/09	**HLW**	**12:43 AM**	**7.5**
	LHW	**5:25 AM**	**11.1**
	LLW	**12:38 PM**	**-3.9**
	HHW	**8:12 PM**	**12.4**

3) Draw the tidal heights on the graph for Seattle on June 24, 2009.

   a) On the graph, label the following properties: Higher high water (HHW), Lower low water (LLW), Higher low water (HLW), Lower high water (LHW), ebb, flood, tidal period, tidal day

   b) At what time on this date would you expect the tidal currents to be strongest?

   About halfway between the two extreme heights, 12:38 & 8:12, ~ 4 PM (flood)

   c) What time you would expect the tidal currents to be weakest?

   About halfway through the smallest exchange, 12:43 – 5:25, ~ 3:15 AM (flood)

   d) When do you observe a "minus tide?" Define "minus tide"

   12:38 PM (LLW) Tide is lower than the long-term mean LLW (=tidal datum)

4) Why do the times of the high and low tides change from one day to the next?

   Tidal stages get later with each passing day (change is variable but averages 50 minutes). Tidal day is 24:50