Honors Math 3



Trigonometry

PROBLEM TASK:

At midnight, the water at a particular beach is at high tide. At the same time a gauge at the end of a pier reads 10 feet. Low tide is reached at 6 AM when the gauge reads 4ft.

- a. Choose which trig function would be the best fit for this model (assuming midnight is t=0). Justify your choice using specific characteristics of trigonometric function graphs.
- b. Determine the midline, amplitude and period using the above tidal information. You must show all computations and explain why you performed each computation.
- c. Write a function based on parts one and two to represent the above tidal information.

- d. If the times for high and low tides are reversed what (if anything) would change in the equation from part (c)? Justify your conclusion.
- e. If you were instructed to let t=0 represent 9pm, would your function in part (a) still be the most convenient choice? Why or why not? If not, convince your teacher what a better choice would be.

