Do you enjoy the ocean?

Personal history time with Mr. Rogers.

Today's learning objective:

By the end of class, I will be able to solve and graph trig functions to find the solutions of real world problems.

cotidiana

Today's language objective:

I will utilize trigonometric vocabulary when conversing with my peers and teacher.

*Maximum *Minimum *Sinusoidal

A tide can be modeled by the function:

$$h(t) = 6\cos\left(\frac{2\pi}{12.2}(t-4)\right) + 6.1$$

where "h" is the height of the water in meters, and "t" is the number of hours past midnight.

1) Find the first exact time at which the height of water reaches its maximum. *[non-calc]*

(4, 12.1)

2) Find the first exact time at which the height of the water reaches its minimum. *[calc]*

10.1 10:06 am

A tide can be modeled by the function:

$$h(t) = 6 \cos \frac{2\pi}{12.2}(t - 4) + 6.1$$

$7 = y_2$

where "h" is the height of the water in meters, and "t" is the number of hours past midnight.

Find

3) ~~What is~~ the first exact time the height of the water reaches 7 meters after midnight. *[calc]*

1:15 AM

Do you know what a "Slinky" is?

A modified Slinky is suspended from the ceiling. After release, it oscillates according to the following function:

$L(t) = 11 + 5\cos(720t)^\circ$

where “L” is the length of the slinky in cm and "t" is the time in seconds after release

1) Find the length of the Slinky after one second *[non-calc]*

16

2) Find the minimum length of the Slinky. *[non-calc]*

6

A modified Slinky is suspended from the ceiling. After release, it oscillates according to the following function:

$0 = 5\cos(720t)^\circ$

$L(t) = 11 + 5\cos(720t)^\circ$

$0 = \cos(720t)^\circ$

$11 = 11$

where "L" is the length of the slinky in cm and "t" is the time in seconds after release

$90 = 720t$

3) Find the first time at which the Slinky is 11 cm. *[non-calc]*

$\frac{9}{72} = t = \frac{1}{8}s$