

Name _____

Date _____

Modeling Phenomena with Trigonometric Functions - Guided Lesson Explanation

Modeling of functions follow the formula:

$$F(t) = A (B - C) + D$$

A is the amplitude.

B is the period.

C is the phase shift.

D is the vertical shift.

Explanation#1

As you can see from the model formula, 3 is the amplitude of function $y = 3 \tan \left(\frac{4x}{8} \right)$.

Explanation#2

The period of $y = a x \sin (bx + c) + d = 2\pi / b$

$$b = 3/2$$

$$2\pi / |3/2| = 2\pi / (3/2) = 4\pi / 3$$

Explanation#3

The amplitude of function $y = 9 \cos \left(\frac{3x}{8} \right)$ is 9.

