

***Modeling Trig. Functions***

1. Mr. Phelan cannon-balls from the side of the pool into the water. He touches the bottom of the pool and makes it back to water level. His swimming coach greets him and says he took 12 seconds to arrive back at water level after he jumped. If the pool is 6 feet deep, and Mr. Phelan jumped 6 feet in the air:

*(A.) How can we express his jump using a trigonometric function? (B.) How many seconds did it take for Mr. Phelan to touch the bottom of the pool?*

2. During a workout, Ms. Gersowsky is timed to complete a full push-up in 2 seconds. When she is in resting position, her body is leveled at 7 inches above the ground. When her body is in flexing position, she is leveled at 3 inches above the ground.

*(A.) Write a model for the height Ms. Gersowsky's body is above the ground over time. (B.) After 1 minute, what is the height of her body above the ground?*