Bill goes to Vegas to ride the world’s tallest Ferris wheel. Bill isn’t really in to enjoying Ferris wheel rides, instead he likes to think about how high off the ground he is at different points. Bill does his research before getting to this world famous Ferris wheel and finds it has a diameter of 520 feet, the center of the Ferris wheel is 290 feet off the ground and it takes 10 minutes to make one-third of a revolution.

Write a sine function to represent Bill’s height off the ground at any given time.

Write a cosine function to represent Bill’s height off the ground at any given time.

Write a sin and cos function to represent Bill’s height off the ground when he is **directly below** the center of the wheel.

Write a sin and cos function to represent Bill’s height 5 minutes after he passes the spot **directly left** of the center of the wheel.