

# Chapter 1.5: Trig Functions

## Calculus I

College of the Atlantic. Fall 2014

1. What is  $\cos(0.4)$ ? Use radians.
2. Write a formula for a sine function that has an amplitude of 3 and a period of 4.
3. What is the period of  $\sin(2x + 1)$ ?
4. What is the period of  $\cos(2x + 1)$ ?
5. What is the period of  $\cos(2x + 11)$ ?
6. Solve for  $x$ :  $\cos(x) = .9$ .
7. Solve for  $x$ :  $\cos(x) = x$ .
8. Write a formula for a sine function that has an amplitude of 3, a period of 4 and a value of 2 at  $t = 0$ .
9. The yearly population  $P(t)$  of lizards on an island is well approximated by:

$$P(t) = 1000 + 120 \sin\left(\frac{\pi}{6}(t - 3)\right), \quad (1)$$

where  $t$  is measured in years since 1980.

- (a) What is the period of the lizard oscillations?
- (b) What is the maximum number of lizards found on the island?
- (c) What is the minimum number of lizards found on this island?