

# Math 1613 - Trigonometry

## Written Assignment 3 - Due 2016.06.26

---

Directions: Please answer the following question in complete sentences. Be sure to label all geometric objects in any illustrations (if any). I will accept an answer in a scanned image format, as a pdf, or as a picture taken and sent from your awesome smart phone.

Question: Because the moon orbits the Earth, we observe different phases of the moon during the period of a month. The *phase*  $F$  of the moon is modeled by

$$F(t) = \frac{1}{2}(1 - \cos(t))$$

and gives the fraction of the moon's face that is illuminated by the sun. Evaluate each of the following expressions and interpret the results:

(a)  $F(0)$

(b)  $F\left(\frac{\pi}{2}\right)$

(c)  $F(\pi)$

(d)  $F\left(\frac{3}{2}\pi\right)$