

Outcome 3: Use the language of mathematics to determine relationships and patterns in graphs and characteristics of circular trig functions using pre-requisite knowledge of graphing techniques of common functions.

Math 1540 Assessment Outcome 3 Fall 2019

1. (12 pts.) In a full sentence, describe precisely the effect of each value(number) in the equation when the circular function is graphed. All terms in the word bank must be used at least once.

WORD BANK phase shift period amplitude vertical shift reflect in x-axis reflect in y-axis

$$f(x) = -7 \cos\left(4\left(x - \frac{\pi}{2}\right)\right) + 30 \quad \text{which is equivalent to} \quad f(x) = -7 \cos(4x - 2\pi) + 30$$

7
Negative sign on the 7
4
$\frac{\pi}{2}$
30
What if the "4" was "negative 4" instead of positive?

2. (12pts. total) Write the letter of the equation on its matching graph. Scale for the y axis is one per gridline.

- A. $y = -2 \sin(x)$
- B. $y = \sin(x) - \frac{\pi}{2}$
- C. $y = 2 \sin(x)$
- D. $y = \sin\left(x - \frac{\pi}{2}\right)$
- E. $y = \sin(2x)$
- F. $y = \sin(x) + 2$

