Name: _____

F.IF.C.7: Graphing Trigonometric Functions 3

1 What are the amplitude and the period of the graph represented by the equation $y = -3\cos\frac{\theta}{3}$?

1) amplitude: –3; period: $\frac{\pi}{3}$
2) amplitude: –3; period: 6π
3) amplitude: 3; period: $\frac{\pi}{3}$
4) amplitude: 3; period: 6π

2 Which statement is *incorrect* for the graph of the function $y = -3\cos\left[\frac{\pi}{3}(x-4)\right] + 7$?

1) The period is 6.
2) The amplitude is 3.
3) The range is [4,10].
4) The midline is $y = -4$.

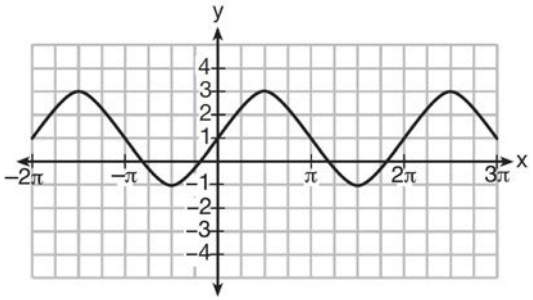
3 Tides are a periodic rise and fall of ocean water. On a typical day at a seaport, to predict the time of the next high tide, the most important value to have would be the

1) time between consecutive low tides
2) time when the tide height is 20 feet
3) average depth of water over a 24-hour period
4) difference between the water heights at low and high tide

4 The average monthly temperature of a city can be modeled by a cosine graph. Melissa has been living in Phoenix, Arizona, where the average annual temperature is 75°F. She would like to move, and live in a location where the average annual temperature is 62°F. When examining the graphs of the average monthly temperatures for various locations, Melissa should focus on the

1) amplitude
2) horizontal shift
3) period
4) midline

5 A sine function is graphed below.



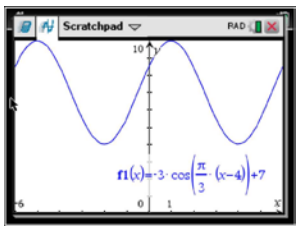
Determine and state the amplitude and period of this function.

6 The volume of air in a person's lungs, as the person breathes in and out, can be modeled by a sine graph. A scientist is studying the differences in this volume for people at rest compared to people told to take a deep breath. When examining the graphs, should the scientist focus on the amplitude, period, or midline? Explain your choice.

F.IF.C.7: Graphing Trigonometric Functions 3
Answer Section

1 ANS: 4 REF: 011627a2

2 ANS: 4



As the range is [4,10], the midline is $y = \frac{4+10}{2} = 7$.

REF: fall1506aii

3 ANS: 1

The time of the next high tide will be the midpoint of consecutive low tides.

REF: 011907aii

4 ANS: 4 REF: 081912aii

5 ANS:

$2, 2\pi$

REF: 061633a2

6 ANS:

Amplitude, because the height of the graph shows the volume of the air.

REF: 081625aii