

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

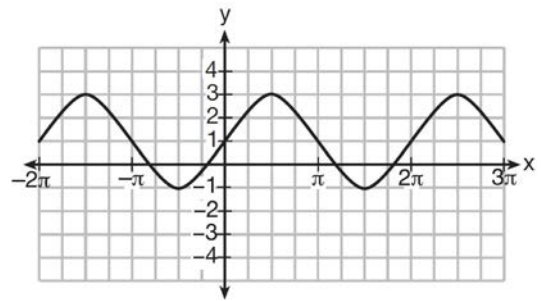
- 1 What are the amplitude and the period of the graph represented by the equation  $y = -3 \cos \frac{\theta}{3}$ ?
- 1) amplitude:  $-3$ ; period:  $\frac{\pi}{3}$
  - 2) amplitude:  $-3$ ; period:  $6\pi$
  - 3) amplitude:  $3$ ; period:  $\frac{\pi}{3}$
  - 4) amplitude:  $3$ ; period:  $6\pi$

- 2 The graph of which equation has amplitude 2 and period  $\pi$ ?
- 1)  $y = 2 \cos 2x$
  - 2)  $y = \frac{1}{2} \sin 2x$
  - 3)  $y = 2 \sin x$
  - 4)  $y = 2 \cos \frac{1}{2}x$

- 3 The graph of which function has an amplitude of 2 and a period of  $4\pi$ ?
- 1)  $y = 2 \sin \frac{1}{2}x$
  - 2)  $y = 2 \sin 4x$
  - 3)  $y = 4 \sin \frac{1}{2}x$
  - 4)  $y = 4 \sin 2x$

- 4 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  $y = -4$ .

- 5 A sine function is graphed below.



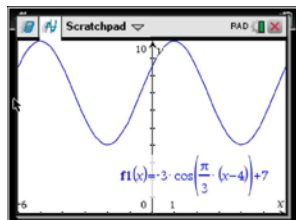
Determine and state the amplitude and period of this function.

- 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.

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#### Answer Section

- 1 ANS: 4 REF: 011627a2  
 2 ANS: 1 REF: 068425siii  
 3 ANS: 1 REF: 069634siii  
 4 ANS: 4



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

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- 5 ANS:  
 2,  $2\pi$

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- 6 ANS:  
 Amplitude, because the height of the graph shows the volume of the air.

REF: 081625aii