F.IF.C.7: Graphing Trigonometric Functions 1
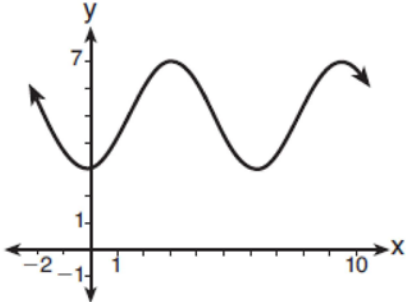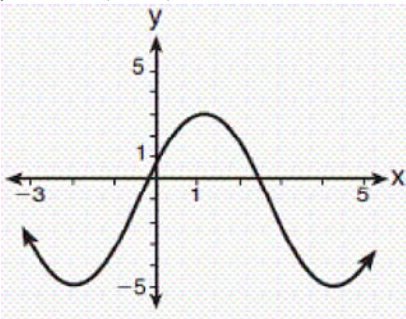
1 Which sinusoid has the greatest amplitude?
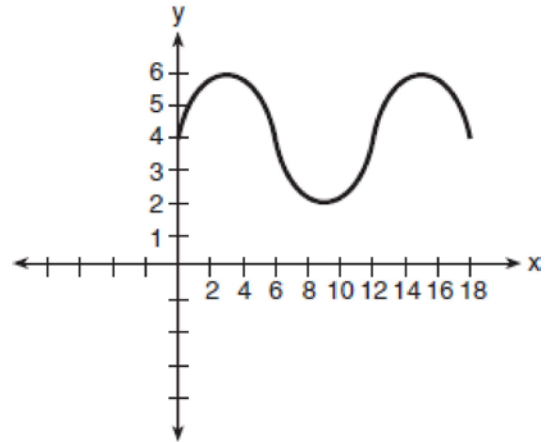

1)
2) $y = 3\sin(\theta - 3) + 5$

3)
4) $y = -5\sin(\theta - 1) - 3$

2 What is the amplitude of the function shown in the accompanying graph?

1) 1.5
2) 2
3) 6
4) 12

3 What is the amplitude of the function $y = \dfrac{2}{3}\sin 4x$?

1) $\dfrac{\pi}{2}$

2) $\dfrac{2}{3}$

3) 3π

4) 4

4 What is the amplitude of the graph of the equation $y = 2\sin\frac{1}{2}x$?

1) $\frac{1}{2}$

2) 2

3) π

4) 2π

5 What is the amplitude of the graph of the equation $y = 2\sin 3x$?

1) $\frac{2\pi}{3}$

2) 2

3) 3

4) 6π

6 The equation below can be used to model the height of a tide in feet, $H(t)$, on a beach at t hours.

$$H(t) = 4.8\sin\left[\frac{\pi}{6}(t+3)\right] + 5.1$$

Using this function, the amplitude of the tide is

1) $\frac{\pi}{6}$

2) 4.8

3) 3

4) 5.1

7 A monitor displays the graph $y = 3\sin 5x$. What will be the amplitude after a dilation of 2?

1) 5

2) 6

3) 7

4) 10

8 What is the amplitude of the graph of $y = \cos 2x$?

9 What is the amplitude of the graph of $y = \frac{1}{2}\sin 2x$?

10 What is the amplitude of the graph of the equation $y = 4\sin\frac{1}{2}x$?

11 What is the amplitude of the graph of the equation $y = 3\sin\frac{1}{2}x$?

12 What is the amplitude of the function $y = 3\sin 2x$?

13 What will be the amplitude of the image of the curve $y = 2\sin 3x$ after a dilation of scale factor 2?

14 On July 21, 2016, the water level in Puget Sound, WA reached a high of 10.1 ft at 6 a.m. and a low of −2 ft at 12:30 p.m. Across the country in Long Island, NY, Shinnecock Bay's water level reached a high of 2.5 ft at 10:42 p.m. and a low of −0.1 ft at 5:31 a.m. The water levels of both locations are affected by the tides and can be modeled by sinusoidal functions. Determine the difference in amplitudes, in feet, for these two locations.

2

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Answer Section

  1 ANS: 4   REF: 081718aii
  2 ANS: 2   REF: 010715b
  3 ANS: 2   REF: 060403b
  4 ANS: 2   REF: 018719siii
  5 ANS: 2   REF: 068715siii
  6 ANS: 2   REF: 082203aii
  7 ANS: 2   REF: 010301b
  8 ANS:

1

REF: 068007siii
  9 ANS:

$\frac{1}{2}$

REF: 018604siii
10 ANS:

4

REF: 010401siii
11 ANS:

3

REF: 089001siii
12 ANS:

3

REF: 080002siii
13 ANS:

4

REF: 069707siii
14 ANS:

$$\frac{10.1 - -2}{2} - \frac{2.5 - -0.1}{2} = 6.05 - 1.3 = 4.75$$

REF: 081930aii