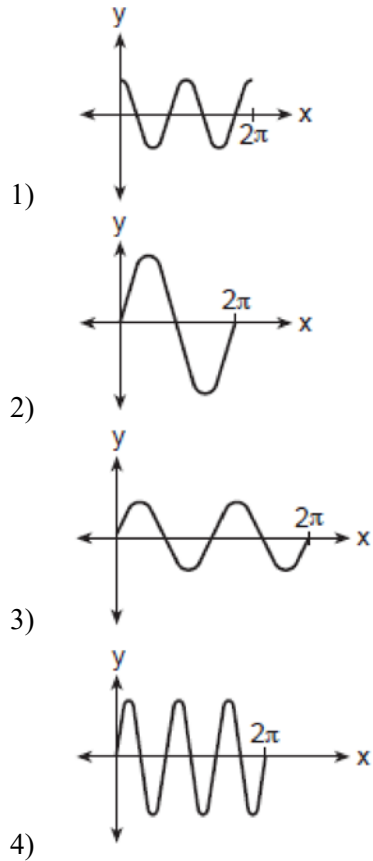
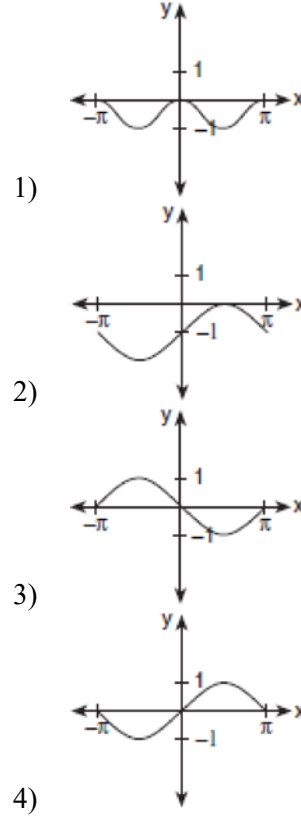


F.IF.C.7: Graphing Trigonometric Functions 5

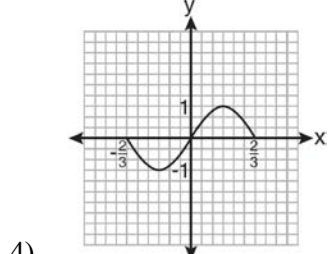
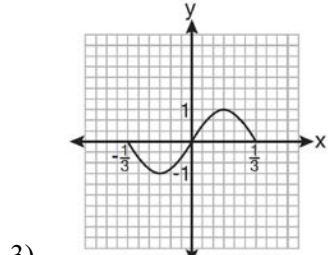
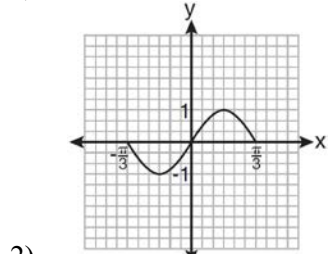
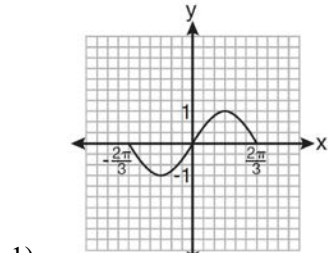
- 1 Which graph represents a sound wave that follows a curve whose period is π and that is in the form $y = a \sin bx$?



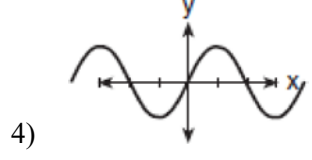
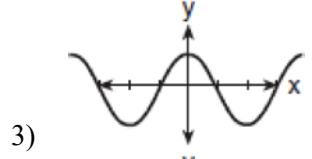
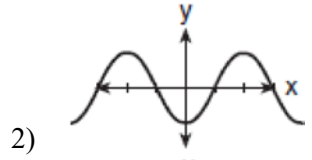
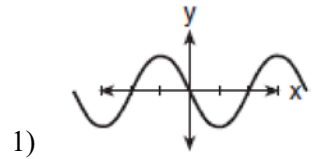
- 2 Which graph represents the function $f(x) = -\sin x$ in the interval $-\pi \leq x \leq \pi$?



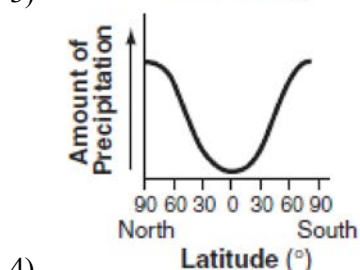
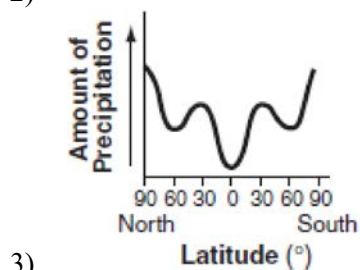
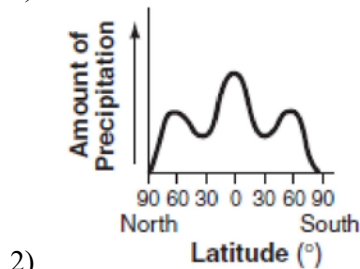
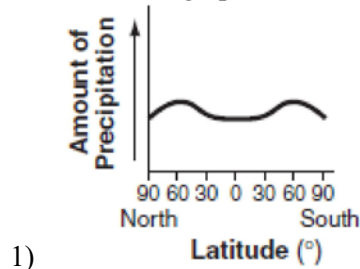
3 Which graph represents one complete cycle of the equation $y = \sin 3\pi x$?



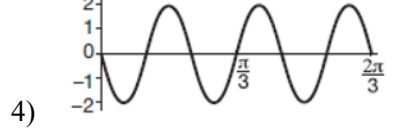
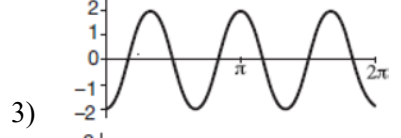
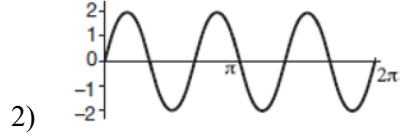
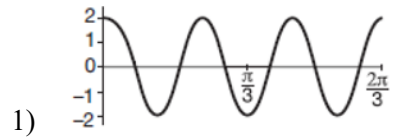
4 If $f(x) = \cos x$, which graph represents $f(x)$ under the composition $r_{y\text{-axis}} \circ r_{x\text{-axis}}$?



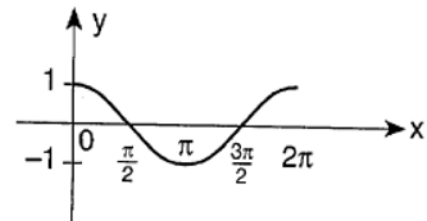
- 5 The graphs below show the average annual precipitation received at different latitudes on Earth. Which graph is a translated cosine curve?



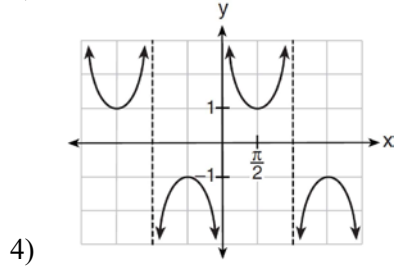
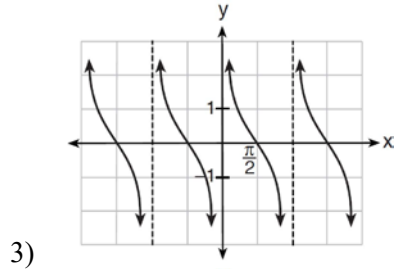
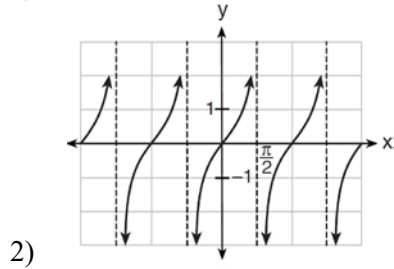
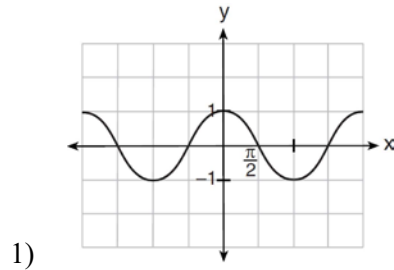
- 6 Which graph represents a cosine function with no horizontal shift, an amplitude of 2, and a period of $\frac{2\pi}{3}$?



- 7 The graph below *incorrectly* represents the equation $y = 2 \cos x$. Write a mathematical explanation of why this graph is incorrect.



8 Which is a graph of $y = \cot x$?



F.IF.C.7: Graphing Trigonometric Functions 5

Answer Section

1 ANS: 3 REF: 080815b

2 ANS: 3 REF: 060228siii

3 ANS: 3

$$\text{period} = \frac{2\pi}{b} = \frac{2\pi}{3\pi} = \frac{2}{3}$$

REF: 081026a2

4 ANS: 2

The reflection of $f(x)$ in the x -axis is $y = -\cos(x)$, which is represented in answer (2). The graph of $y = -\cos(x)$ is symmetric with respect to the y -axis, so its reflection in the y -axis is represented by the same graph.

REF: 060309b

5 ANS: 4 REF: 080503b

6 ANS: 3

(3) repeats 3 times over 2π .

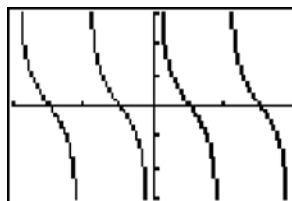
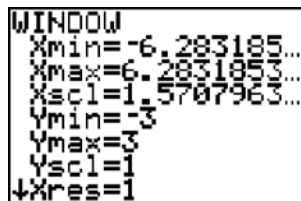
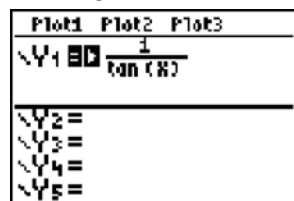
REF: 011722aai

7 ANS:

Amplitude should be 2.

REF: 089736siii

8 ANS: 3



REF: 011207a2