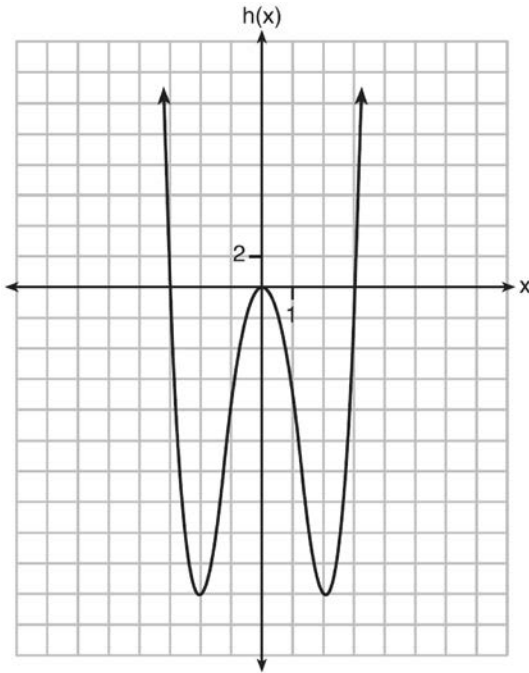


F.BF.B.3: Even and Odd Functions

1 Functions f , g , and h are given below.

$$f(x) = \sin(2x)$$

$$g(x) = f(x) + 1$$



Which statement is true about functions f , g , and h ?

- 1) $f(x)$ and $g(x)$ are odd, $h(x)$ is even.
- 2) $f(x)$ and $g(x)$ are even, $h(x)$ is odd.
- 3) $f(x)$ is odd, $g(x)$ is neither, $h(x)$ is even.
- 4) $f(x)$ is even, $g(x)$ is neither, $h(x)$ is odd.

2 Which equation represents an odd function?

- 1) $y = \sin x$
- 2) $y = \cos x$
- 3) $y = (x + 1)^3$
- 4) $y = e^{5x}$

3 Algebraically determine whether the function

$$j(x) = x^4 - 3x^2 - 4$$
 is odd, even, or neither.

F.BF.B.3: Even and Odd Functions**Answer Section**

1 ANS: 3

$f(x) = -f(x)$, so $f(x)$ is odd. $g(-x) \neq g(x)$, so $g(x)$ is not even. $g(-x) \neq -g(x)$, so $g(x)$ is not odd. $h(-x) = h(x)$, so $h(x)$ is even.

REF: fall1502aaii

2 ANS: 1

The graph of $y = \sin x$ is unchanged when rotated 180° about the origin.

REF: 081614aaii

3 ANS:

$j(-x) = (-x)^4 - 3(-x)^2 - 4 = x^2 - 3x^2 - 4$ Since $j(x) = j(-x)$, the function is even.

REF: 081731aaii