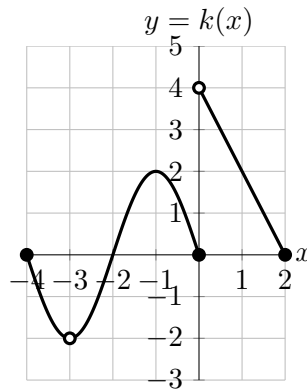
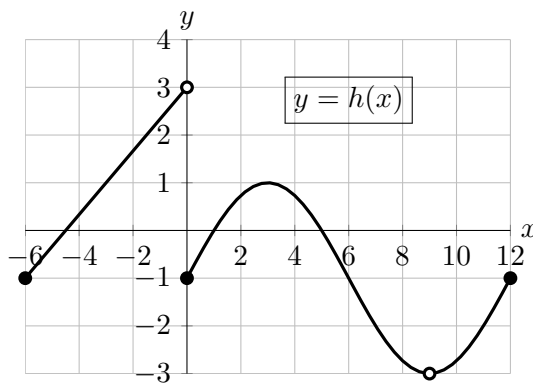


10. [6 points] The graph of the function $k(x)$ is shown below.



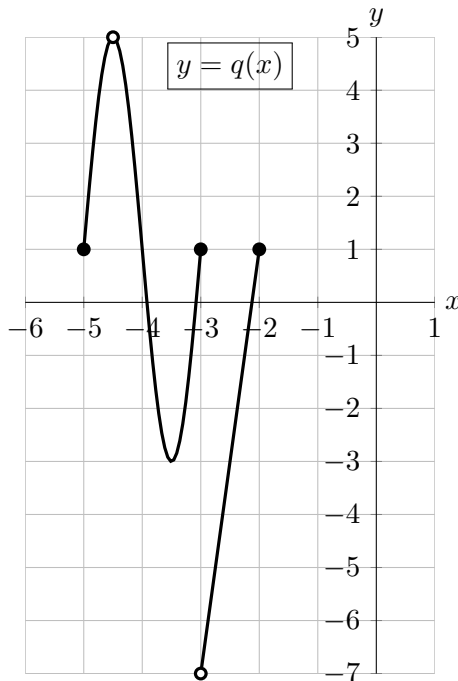
a. [3 points] The function $h(x)$ is obtained from $k(x)$ by one or more transformations and its graph is shown below. Note that the scale on the axes is not the same.



Write a formula for $h(x)$ in terms of the function k .

Solution: **Answer:** $h(x) = k\left(-\frac{1}{3}x\right) - 1$

b. [3 points] The function $q(x)$ is obtained from $k(x)$ by one or more transformations and its graph is shown below.



Which one of the following choices is the correct formula for $q(x)$?

Solution:

- (A) $q(x) = 2k(-2(x + 3)) - 3$
- (B) $q(x) = 2k\left(-\frac{1}{2}x + 1\right) - 3$
- (C) $q(x) = 2k\left(\frac{1}{2}(x + 3)\right) - 6$
- (D) $q(x) = -2k(2(x + 4)) - 2$
- (E) $q(x) = -2k(2(x + 3)) + 1$
- (F) $q(x) = -2k(2x + 3) + 1$
- (G) $q(x) = -2k\left(-\frac{1}{2}(x + 4)\right) - 2$
- (H) $q(x) = -2k\left(\frac{1}{2}(x - 3)\right) + 1$
- (I) NONE OF THESE