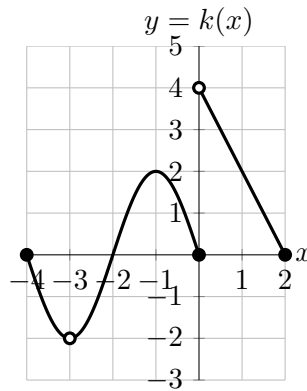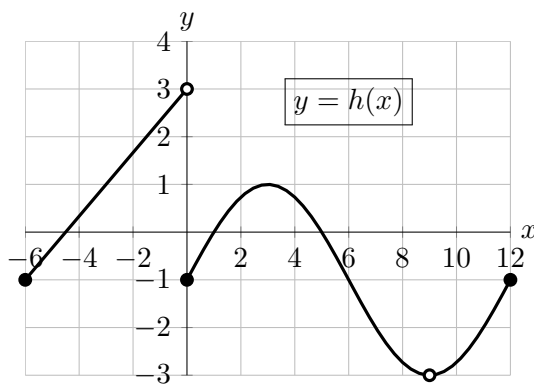**10**. [6 points] The graph of the function $k(x)$ is shown below.
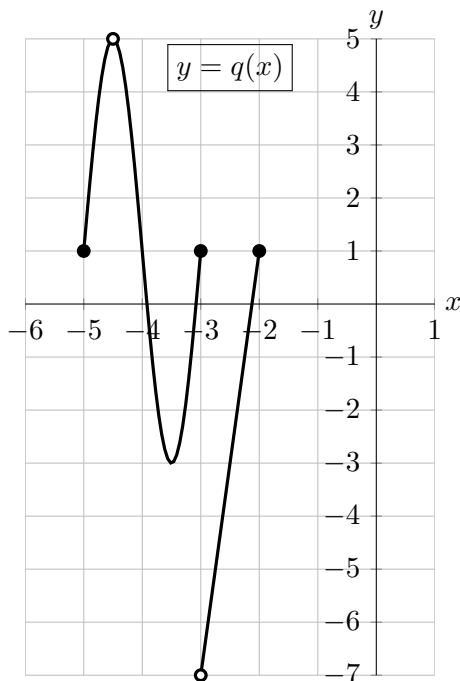
$$y = k(x)$$

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.

Answer: $h(x) = $ _____

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

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

(A) $q(x) = 2k(-2(x+3)) - 3$

(B) $q(x) = 2k(-\frac{1}{2}x + 1) - 3$

(C) $q(x) = 2k(\frac{1}{2}(x+3)) - 6$

(D) $q(x) = -2k(2(x+4)) - 2$

(E) $q(x) = -2k(2(x+3)) + 1$

(F) $q(x) = -2k(2x+3) + 1$

(G) $q(x) = -2k(-\frac{1}{2}(x+4)) - 2$

(H) $q(x) = -2k(\frac{1}{2}(x-3)) + 1$

(I) NONE OF THESE