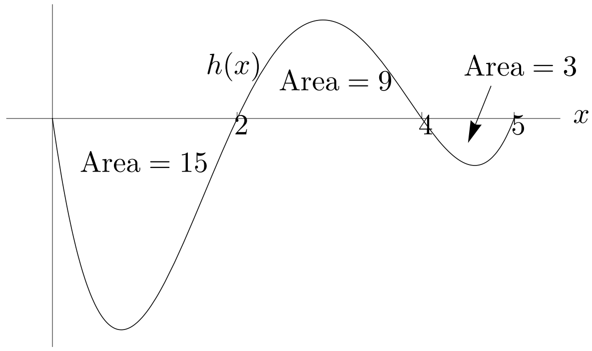
2. [15 points] Using the graph of $h(x)$ shown below, compute each of the following quantities. If there is not enough information to compute the given quantity, write "not enough information". You do not need to explain your answers.



a. [3 points] $\displaystyle\int_2^0 \Big(h(x)+2\Big)dx$

Solution:

$$\int_2^0 \Big(h(x)+2\Big)dx = -\int_0^2 h(x)dx - \int_0^2 2dx = 15 - 4 = 11.$$

b. [2 points] $\displaystyle\int_0^5 3h(y)dy$

Solution:

$$\int_0^5 3h(y)dy = 3(-15+9-3) = -27.$$

c. [3 points] $\displaystyle\int_8^9 h(x-4)dx$

Solution:

$$\int_8^9 h(x-4)dx = \int_4^5 h(x)dx = -3.$$

d. [3 points] The average value of $h(x)$ on the interval $[-2,2]$, assuming that $h(x)$ is an even function.

Solution:

$$\frac{1}{4}\int_{-2}^2 h(x)dx = \frac{1}{4}\cdot 2 \cdot \int_0^2 h(x)dx = \frac{-15}{2}.$$

e. [2 points] $H(2)$, where H is an antiderivative of h

Solution: Not enough information.

f. [2 points] $H(2) - H(0)$, where H is an antiderivative of h

Solution: By the fundamental theorem of calculus,

$$H(2) - H(0) = \int_0^2 h(x)dx = -15.$$