Now find b) for yourself.

$$\int_1^0 f(t)\,dt = -\int_0^1 f(t)\,dt = -\left(2-\frac{\pi}{4}\right)$$

$$= \frac{\pi}{4}-2$$

2) Let $h(x) = \int_{-1}^{x} f(t)\,dt$ be a differentiable function on the interval $[-2, 5]$. (f still refers to the graph on the previous page)

a) Find $h(-1)$, $h(3)$, and $h(5)$

$$h(-1) = \int_{-1}^{-1} f(t)\,dt = 0$$

$$h(3) = \int_{-1}^{3} f(t)\,dt = 4-\frac{\pi}{2}+1-1 = 4-\frac{\pi}{2}$$

$$h(5) = \int_{-1}^{5} f(t)\,dt = 4-\frac{\pi}{2}+1-1+2 = 2-\frac{\pi}{2}$$

b) Where does h have a relative maximum? Why?

$x=2$ because f ($= h'$) goes from $+$ to $-$

c) Find $h''(2)$

$h''(2) = f'(2) =$ slope of f at $x=2$

$= -2$

d) Over what intervals is h concave down? Why?

$h'' < 0$

$f' < 0$

f has a negative slope $\rightarrow$ $-1 < x < 0$, $1 < x < 3$