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# Worksheet 23

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1. Compute three of the following—or all of them, for extra credit ☺

(a)  $\int (x + 2)(x^{-1} + x)dx$

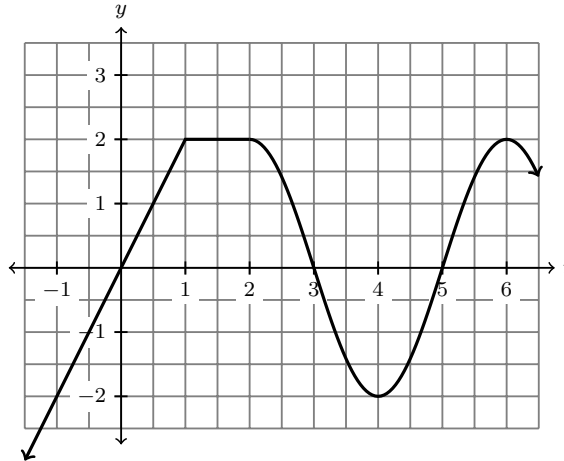
(b)  $\int \frac{\sqrt{x} + 2x^2}{x} dx$

(c)  $\int xe^{x^2} dx$

(d)  $\int e^{x^2} dx$

2. The graph of  $f(t)$  is below. Define a new function by

$$A(x) = \int_{-1}^x f(t) dt$$



(a) Find  $A(0)$ .

$$\begin{aligned} A(0) &= \int_{-1}^0 f(t) dt \\ &= \text{area "under } f \text{" from } -1 \text{ to } 0 \\ &= \end{aligned}$$

(e) Find  $A(3)$ . (An estimate is fine.)

(b) Find  $A(1)$ .

(f) Find  $A(4)$ .

(c) Find  $A(1.5)$ .

(g) Find  $A(6)$ .

(d) Find  $A(2)$ .

(h) Find  $A(-1)$ .

(i) Describe in words (using areas) the meaning of  $A(x)$ .