

Show work for 1 2 and 6 the rest just need answers

#1

5.3.73

Simplify the following expression.

$$\frac{d}{dx} \int_6^x (15t^2 + t + 4) dt$$

$$\frac{d}{dx} \int_6^x (15t^2 + t + 4) dt = \square$$

#2

5.3.77

Question Help

Simplify the following expression.

$$\frac{d}{dx} \int_4^{x^3} \frac{dp}{p^2}$$

$$\frac{d}{dx} \int_4^{x^3} \frac{dp}{p^2} = \square$$

#3

5.3.75

Question Help

Simplify the following expression.

$$\frac{d}{dx} \int_x^3 \sqrt{t^4 + 5} dt$$

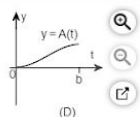
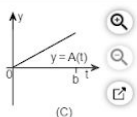
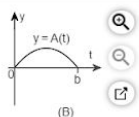
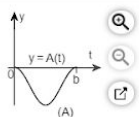
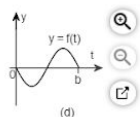
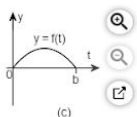
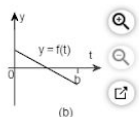
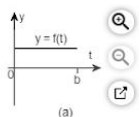
$$\frac{d}{dx} \int_x^3 \sqrt{t^4 + 5} dt = \square$$

#4

5.3.87

Question Help

Match the functions f whose graphs are given in (a)–(d) with the area functions $A(x) = \int_0^x f(t) dt$, whose graphs are given in (A)–(D).



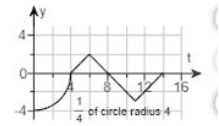
a = , b = , c = , and d = (Type A, B, C, or D.)

#5

5.3.93

Question Help

The graph of f is given in the figure to the right. Let $A(x) = \int_0^x f(t) dt$ and evaluate $A(4)$, $A(6)$, $A(8)$, and $A(14)$.



$A(4) = \square$ (Type an exact answer in terms of π .)

#6

5.4.27

Find the average value of the following function over the given interval. Draw a graph of the function and indicate the average value.

$$f(x) = \frac{6}{x^2 + 1}; [-1, 1]$$

The average value of the function $f(x) = \frac{6}{x^2 + 1}$ on the interval $[-1, 1]$ is $\bar{f} = \square$.

(Simplify your answer. Use integers or fractions for any numbers in the expression. Type an exact answer, using π as needed.)

6#

5.4.28

Find the average value of the following function over the given interval. Draw a graph of the function and indicate the average value.

$$f(x) = \frac{1}{x} \text{ on } [1, e]$$

The average value of the function $f(x) = \frac{1}{x}$ on $[1, e]$ is $\bar{f} = \square$.

(Type an exact answer.)