#1:

Find the exact coordinates of the centroid for the region bounded by the curves $y = x + 2$ and $y = x^2$.

$\bar{x} =$

$\bar{y} =$

#2:

(1 point) Evaluate the integral using an appropriate substitution.

$$\int \frac{e^{\sqrt{5y-5}}}{\sqrt{5y-5}}\, dy = \qquad + C$$

#3:

(1 point) Logarithms as anti-derivatives.

$$\int \frac{-5}{x(\ln x)^2}\, dx =$$

Hint: Use the natural log function and substitution.

#4:

(1 point) Evaluate the indefinite integrals using Substitution. (use C for the constant of integration.)

a) $\int \frac{(\ln x)^4}{x}\, dx =$

b) $\int \frac{\ln(x^4)}{x}\, dx =$

c) $\int \frac{1}{x \ln(x^8)}\, dx =$

#5:

(1 point)

Evaluate the integral

$$\int -9 \cot(x) \ln(\sin(x))\, dx$$

Note: Use an upper-case "C" for the constant of integration.

#6:

(1 point) Evaluate the indefinite integral.

$$\int \frac{\cos x}{4 \sin x + 24}\, dx$$

$+C$

#7:

(1 point) Use integration by parts to evaluate the integral.

$$\int 3x \ln(2x)\, dx$$

$+C$

#8:

(1 point) Use integration by parts to evaluate the integral.

$$\int 125x^2 \cos(5x) dx$$

$+C$

#9:

Evaluate the integral

$$\int -4x^2 \sin(\pi x)\, dx$$

Note: Use an upper-case "C" for the constant of integration.

#10:

(1 point) Find the integral.

$\int e^{5x} \sin(6x) dx =$

#11:

Evaluate the integral

$$\int_0^1 2x5^x \, dx$$

#12:

Suppose that $f(1) = -7, f(4) = -4, f'(1) = -9, f'(4) = 5$, and f'' is continuous. Find the value of $\int_1^4 xf''(x)\,dx$.

#13:

(1 point) Evaluate the indefinite integral.

$$\int 35\cos^2(11x)\,dx$$

$+C$

#14:

Evaluate the integral

$$\int 8\sin^3(x)\cos^5(x)\,dx$$

Note: Use an upper-case "C" for the constant of integration.

#15:

Evaluate the integral

$$\int -2\tan^3(x)\,dx$$

Note: Use an upper-case "C" for the constant of integration.