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1. (1 pt) Consider the function  $f(x) = 12x^3 - 15x^2 + 4x - 6$ .  
Enter an antiderivative of  $f(x)$

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2. (1 pt) Consider the function  $f(x) = \frac{6}{x^3} - \frac{3}{x^6}$ .  
Let  $F(x)$  be the antiderivative of  $f(x)$  with  $F(1) = 0$ .  
Then  $F(x) =$  \_\_\_\_\_

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3. (1 pt) Let  $f(x) = \frac{10}{x} - 3e^x$ .  
Enter an antiderivative of  $f(x)$

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4. (1 pt) Evaluate the definite integral

$$\int_2^9 \frac{3}{\sqrt{x}} dx$$

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5. (1 pt) Evaluate the indefinite integral.

$$\int \frac{(\ln(x))^9}{x} dx$$

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\_\_\_\_\_ + C

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6. (1 pt)  $\int \sqrt[6]{e^x} dx =$  \_\_\_\_\_ + C

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7. (1 pt) Evaluate the definite integral.

$$\int_1^{e^3} \frac{dx}{x(1 + \ln x)}$$

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