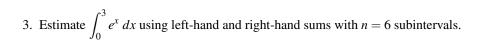
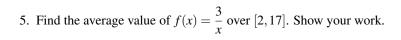
1. Evaluate $\int_0^1 x^9 + 45x \, dx$. Show your work.

2. Evaluate $\int x^8 \sqrt{x^9 + 8} \, dx$. Show your work.

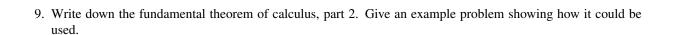


4. Calculate $\frac{dy}{dx}$ given $y^7 + x^2 e^y = 0$. Show your work.



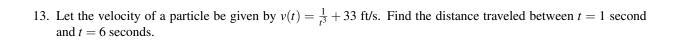
6. Two ships start at the same point. One begins traveling north at a speed of 15 mph and the other ship heads east at a speed of 60 mph. At what rate is the distance between thhe ships changing after 2 hours. Show your work.

7.	Write down as many of the 8 properties of definite integrals as you can.
8.	Write down the fundamental theorem of calculus, part 1. Give an example problem showing how it could be
٠.	used.
•	used.
	used.



10. Find f(x) if $f'(x) = e^{-x} + 3x^5$ and f(0) = 17.

•	In your own words, write down what you think an antiderivative is.
	Which regions of a function contribute to negative area and which regions contribute to positive area in the area interpretation of the definite integral?
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14. Evaluate
$$\int \frac{4x + 20}{(x^2 + 10x + 45)^{\frac{5}{2}}} dx$$

15. Use left and right riemann sums to estimate the integral of x^2 on the interval $[0,1]$ with $n=4$ subintervals.				