PHONES OFF!!

SHOW **ALL** YOUR WORK NEATLY N THE EXAM BOOK. **START A NEW PAGE IN THE EXAM BOOK WHEN INSTRUCTED,** AND *DRAW A BOX AROUND* YOUR FINAL ANSWER.

0. THE FINAL EXAM FOR THIS CLASS IS **WEDNESDAY, DEC 13 AT 1:00**. WHEN IS THE FINAL EXAM FOR THIS COURSE? WRITE YOUR ANSWER ON THE FRONT OF THE EXAM BOOK.

I. FIND THE DERIVATIVE OF EACH FUNCTION. **DO NOT TO SIMPLIFY** YOUR RESULT.

1. $f(x)=\ln(\sec(x))$

2. $f(x)=3x^3e^{(2x^3)}$

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3. $f(x)=\cos(x)\ln(x^2)$

4. $f(x)=\dfrac{x-e^{(5-4x)}}{1+\ln(x)}$

II. FIND EACH INDEFINITE INTEGRAL.

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5. $\int\left(6\sqrt[3]{x}-9x^2-2\right)dx$

6. $\int\left(-\dfrac{1}{\sqrt[4]{x}}+\dfrac{2}{\sqrt[3]{x}}\right)dx$

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7. $\int\left(8x\tan(x^2)\right)dx$

8. $\int\dfrac{e^{3x}}{3+e^{3x}}dx$

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9. $\int\left(\dfrac{6x+18}{x^2+6x}\right)dx$

10. $\int\left(\dfrac{2\sec^2(x)}{1-\tan(x)}\right)dx$

III. EVALUATE EACH DEFINITE INTEGRAL.

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11. $\int_{-1}^{2}\left(6x^2-2x+1\right)dx$

12. $\int_{0}^{1}6x^2\left(\sqrt[3]{x^3-1}\right)dx$

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13. $\int_{5}^{7}(x+2)(6-x)^3\,dx$

14. $\int_{-\pi}^{\pi/2}4\cos(2x)\,dx$