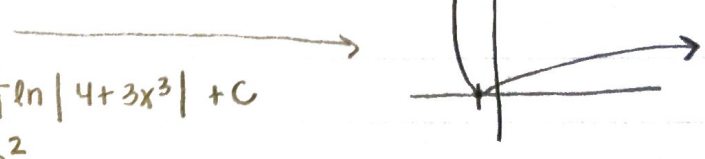
Calc AB Unit 7 Review Key

1. $f'(1) = 1 \ln 7$
2. $\frac{1}{6}\ln|e^{6x}-2| + C$
3. 
4. $(-\infty, -1.120)$
5. $y = 3$
6. $\frac{e^9}{9} - 3 - \frac{1}{9}$ or $\frac{e^9 - 28}{9}$
7. $\ln 2 - \ln|1-e^2|$
8. $\frac{dy}{dx} = -48xe^{-6x^2}$
9. $g'(4) = \frac{1}{7}$ $g'(3)$ = not enough info $g'(6) = \frac{1}{4}$
10. $\frac{\sqrt{34}}{\sqrt{34}x}$
11. $(4x^2+9)\left(\frac{9x^2+2}{3x^3+2x+1}\right) + (8x+9)\ln(3x^3+2x+1)$
12. $y = \ln(x-2)$
13. $-.992$ or $-.993$
14. $y' = \frac{e^x(3x^2) - x^3e^x}{(e^x)^2}$
15. $\frac{\log y}{\log x}$
16. $\frac{9}{2}$
17. $\frac{1}{2}\ln(x+3)^2 + C$
18. $\frac{-4}{3}\sqrt{1-x^3} + C$
19. $\lim_{x\to\infty} e^x = \infty$ $\lim_{x\to 0} e^x = 1$
20. $\frac{-x}{\ln 6(1-x^2)}$
21. $y - 0 = 3(x-1)$
22. $\frac{y^3e^x}{2y - 3y^2e^x}$
23. 0
24. $(1+\ln x)^4$
25. $x = 0$, $x = 1.796$
26. $\frac{1}{29}e^{ax^2+b} + C$
27. 
28. 
29. $\frac{1}{9}\ln|4+3x^3| + C$
30. p^2
31. $\frac{-1}{12}e^{6-4x^3} + C$
32. x^{12}
33. 3.237
34. $(f^{-1})'(25) = \frac{1}{13}$
35. $6\ln x - \frac{1}{3}x^3 + C$
36. $f(6) = 7 + \int_2^6 f'(x)dx = 7 + 12.5 = \boxed{19.5}$