

I plan to post the questions separately; this page has answers only. The average was approx 66/100. The lowest grades were on the parametric equation problem (averaging about 3.7/10).

1a) $\sec^3 x + \sec x \tan^2 x$

1b) $y' = 12 \tan^3(x^3)x^2 \sec^2(x^3)$

1c) $y' = \frac{2x}{10y + \cos y}$

1d) $y' = 2^x \ln 2$

2a) $1/3$

2b) $-1/x^2$

2c) e^4

3a) The l.l.a is the formula $1 + x$

3b) $e^{0.5} \approx 1.05$

4) I expected you to remember that the usual parametrization of the unit circle is $x = \cos(t)$ and $y = \sin(t)$ with $0 \leq t \leq 2\pi$. Since we only want the third quadrant, we replace $0 \leq t \leq 2\pi$ by $\pi \leq t \leq 3\pi/2$. There are many other possible answers.

5) See the textbook. Most people chose A, but some of the answers were very short on words. For example, I wanted to see the phrase *by the definition of derivative* twice, and some remark about continuity at the end (as well as correct algebra and notation).

6) TTTTTT (I didn't notice this pattern until I wrote the key !)

7) It is a straight line.

B) Nobody got this one. See the text or lecture notes. $\ln |\sec x + \tan x|$.