Answers (not solutuons) to the practice problems for the Second exam in Math 135, Fall 2015

1. a) $\dfrac{1-ye^{xy}}{xe^{xy}+2/y}$. b) $y=-\dfrac{27}{11}x+\dfrac{59}{11}$. c) $(2x\ln x+x)x^{(x^2)}$.

2. a) 6/5. b) $-8/3$.

3. a) 10.15. b) $(4e^{4x}\sin(x^3)+3x^2e^{4x}\cos(x^3))dx$.

4. a) Absolute maximum: 3 at $x=1$. Absolute minimum: -13 at $x=-1$.

   b) Absolute maximum: 9 at $x=0,3$. Absolute minimum: 5 at $x=1$.

5. $c=9^{1/3}$.

6. a) Relative maximum: 1 at $x=0$. Inflection points: $x=\pm 1/\sqrt{2}$. Horizontal asymptote: $y=0$.

   b) Relative maximum: 1 at $x=1$. Relative minimum: 9 at $x=5$. Vertical asymptote: $x=3$.

7. a) This is Example 8 in Section 4.3.

   b) The is Example 6 in Section 4.4.

8. a) $e^{3/2}$. b) 0. c) 0. (You cannot use L'ôpital's rule to calculate this limit.) d) 1/6.

9. $\sqrt{3200/3}$ and $160\sqrt{3/32}$