Math 120a – Exam 2 answers

1. The absolute maximum is 4 at $(-1, 0)$, and the absolute minimum is $-\frac{11}{4}$ at $(\frac{1}{2}, \frac{\sqrt{3}}{2})$.

2. (a) (b) (d)

3. $3 + \sin(1) - \cos(2)$

4. (a) $\dfrac{1}{6}(e^9 - 1)$

   (b) $\displaystyle\int_{-\pi/2}^{\pi/2} \int_{2\cos(\theta)}^{2} (r\cos(\theta) + r\sin(\theta))\, r dr d\theta + \int_{\pi/2}^{3\pi/2} \int_{0}^{2} (r\cos(\theta) + r\sin(\theta))\, r dr d\theta$

5. (a) $e^{\sin(4)} \sin(2)$

   (b) 0

6. $-\dfrac{15\pi}{32} - \dfrac{15}{16} + \dfrac{7}{3} - \dfrac{7\sqrt{2}}{6}$