Assignment 5.

1. e^{-1}

2. $y - e^2 = 3e(x - e)$

3. $y = -\frac{1}{\pi}\left(x - \frac{\pi}{2}\right)$

4. $x = \frac{\pi}{4}$

5. (a) $2^{-\frac{3}{2}}$

2

(b) $-2^{-\frac{3}{2}}$

(c) $-\frac{4\sqrt{5}}{25}$

6. $x^x(\ln x + 1)$

Assignment 6.

1. $y - 2 = x - 1$

2. $y - 1 = -2(x - 1)$

3. $(1, 0)$ and $(4, 12e^{-4})$

4. Max: $\left(\frac{\pi}{4}, 3\right)$, $\left(\frac{3}{4}\pi, -1\right)$; Min $\left(\frac{11}{12}\pi, -\frac{3}{2}\right)$, $\left(\frac{7}{12}\pi, -\frac{3}{2}\right)$

5. (a) Omit

   (b) $x^4 + y^2 = 1$

   (c) $\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{3}}{2}\right)$, $\left(\frac{\sqrt{2}}{2}, -\frac{\sqrt{3}}{2}\right)$