Group Work Review for Exam III

1. If $f(x) = x^{\frac{3}{7}} + e^x$ find $f''(x)$.

2. Find the open intervals on which $f(x) = -2x^3 + 12x^2 + 171x - 7$ is concave up.

3. Find two numbers whose sum is 48 and whose product in maximum.

4. Find the x −values of the points where $f(x) = 5 + (9 + 7x)^{\frac{2}{7}}$ has relative extrema.

5. Find the absolute maximum and minimum of $f(x) = 3x^3 - 3x^2 - 3x + 8$ on the interval $[-1, 0]$

6. If $f(x, y) = e^{2x+2y+42}$, find $f_{xx}(x, y)$.

7. Locate all relative extrema and saddle points of $f(x, y) = x^4 - 2x^2 + y^2 - 4y + 5$.