

Present neatly on separate paper. Justify for full credit. No Calculators.

Name _____ Score _____ A (6 minutes)

1)

For any positive constants a and k , does the graph of the given function have inflection points? If it does, find them. If it does not, explain.

$$y = \frac{a^x}{1 + a^{x+k}}$$

Present neatly on separate paper. Justify for full credit. No Calculators.

Name _____ Score _____ F (6 minutes)

1)

Use implicit differentiation to show that a function defined implicitly by $\sin x + \cos y = 2y$ has a critical point whenever $\cos x = 0$. Then use either the first or second derivative test to classify these critical points as relative maxima or minima.