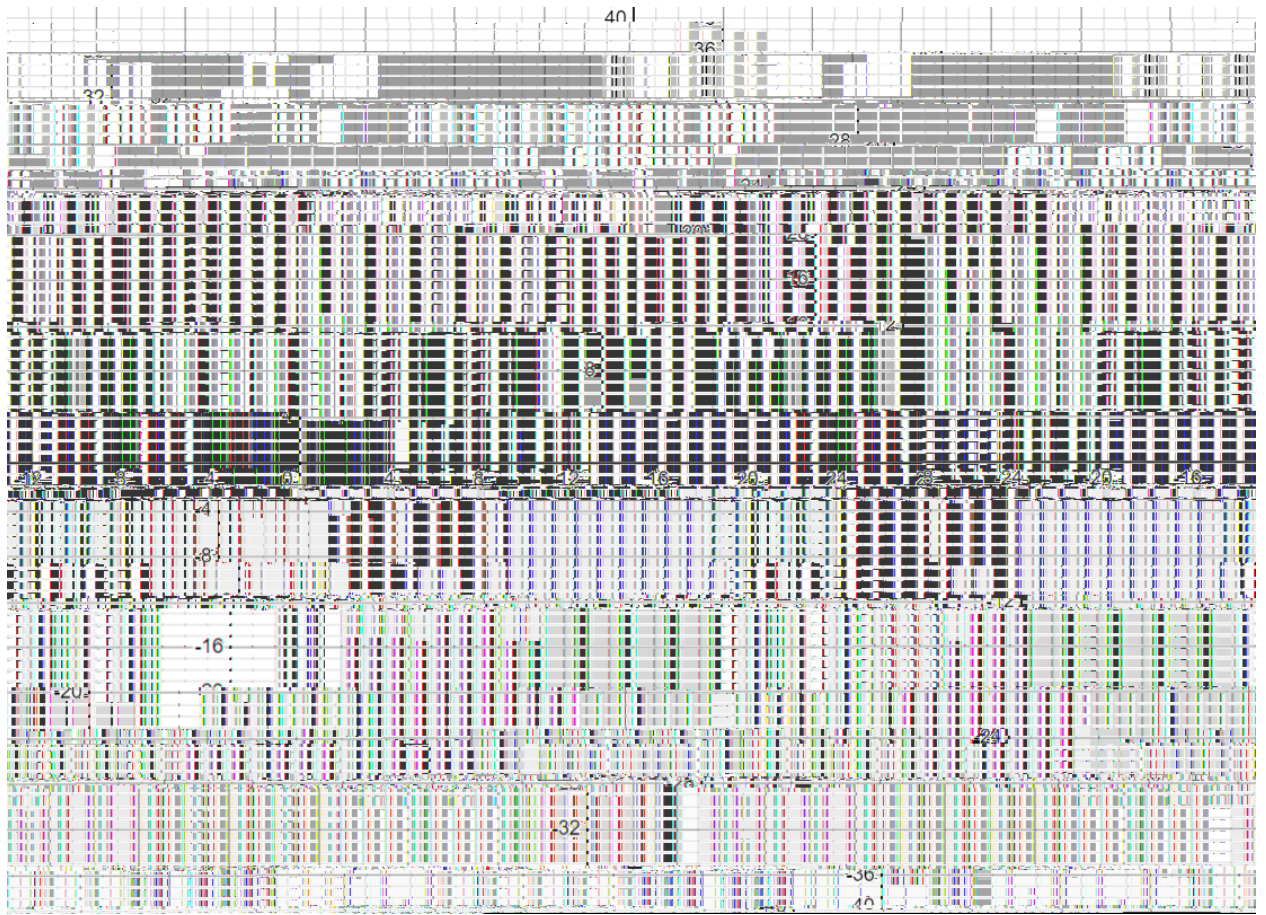


1. (40 pts) The following problems are not related.

- (a) Find $\frac{dy}{dx}$ if $x \cos(y) + y^3 = 3^{-2}$. You should solve for $\frac{dy}{dx}$, but you do not need to simplify your answer further.
- (b) Use linearization to estimate $(8.01)^{2=3}$. You do not need to simplify your answer.
- (c) Show that $f(x) = x^2 - 3x - 5$ satisfies the three hypotheses of Rolle's Theorem on the interval $[-2; 5]$



THIS IS THE END OF THE EXAM