

Show all work and circle/box your final answer. All answers must be simplified unless stated otherwise. If you finish early, you may leave with my approval.

1. (*0 points*) Use linear approximation to approximate $\sqrt[3]{65}$

2. (*0 points*) Find the differential dy for the following:

(a) $y = x\sqrt{1-x^2}$

(b) $y = \cos(x^2)$

3. (*0 points*) Find the absolute extrema of $f(x) = 3x^4 - 4x^3$ on the interval $[-1, 2]$