

WORKSHEET 5
CALCULUS I
MORE PROBLEMS
USING THE DEFINITION OF THE DERIVATIVE
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Reduce numerical results. If an answer *does not exist*, write **DNE** in the corresponding answer blank!

1. Find $f'(x)$ where $f(x) = x^3$ $f: \mathbb{R} \longrightarrow \mathbb{R}$ using the definition of the derivative

A. Find the slope of the tangent line to f at the point $(3, 27)$

B. Find the equation of the normal line to f at the point $(\frac{1}{2}, \frac{1}{8})$

2. Find $f'(x)$ where $f(x) = \frac{x^3}{x+1}$ $f: (-\infty, -1) \cup (-1, \infty) \longrightarrow \mathbb{R}$

A. Find the equation of the tangent line to f at the point $(3, \frac{27}{4})$

B. Find the slope of the normal line to f at the point $(-2, 8)$

In the Douglas Riddle Calculus book (see attachment) Do problems:

9, 11, 13, 17, 21- 27 odd, 31, and 32 on pp 65 – 66.