

INTRODUCTION TO CALCULUS

MATH 1A

UNIT 16: WORKSHEET

The simplification problem in the exam was poorly solved which is not a surprise, as algebra is often a bottle neck. Lets look here at a few more examples.



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Problem 1: Simplify the following expressions and use it to find the derivative

	Function f	Simplified f	Derivative f'
a)	$\arcsin(\sin(x^7))$		
b)	$x^7/x^{5/2}$		
c)	$\sin^2(3x) + \cos^2(3x)$		
d)	$\ln(x^{100})$		
e)	$((e^x)^x)^x$		

Problem 2: Sometimes, one can turn an indefinite form $0 \cdot \infty$ to a form which can be solved by Hospital. In the exam there was an example. Lets look at an other example. What is

$$\lim_{x \rightarrow 0} \ln|x^5| \cdot x^{1000}$$

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¹Illustration AI generated