Chain Rule Explanation

This handout is a step-by-step explanation of the chain rule. The purpose of providing this information is to allow teachers and students to have a scaffolding for making sense of which parts of the derivative are *u* and which parts are *u’.*

1. Find the derivative of

First, let

**Notice that this function is a composition of two functions: , where**

The derivative of a composite function is

**If**

**Therefore, by the chain rule,**

Because then

Substituting and into the derivative, we get

Leaving this derivative unsimplified, we can now clearly label the parts of the derivative with and .

u u’