**Colorado Technical University**

**Course:** MATH205 – Differential Calculus

## Unit 8 Part 16 Readings – Reverse Chain Rule

**Reverse Chain Rule:** *∫ u*n *du* = + c

The Reverse Chain Rule is also called “**integration by substitution**” or “**u-substitution**”

**Derivatives of Transcendental Functions** (used in Reverse Chain Rule problems)

sin *u* = cos *u* cot *u* = csc 2 *u*

cos *u* = –sin *u* sec *u* = sec *u* tan *u*

tan *u* = sec2 *u* csc *u* = csc *u* cot *u*

sin-1 *u* = cot -1 *u* =

cos-1 *u* = sec-1 *u* =

tan-1 *u* = csc-1 *u* =

logb *u* = 1/(u ln(b)) b*u* = b*u* ln(b)

ln *u* = e*u* = e*u*



Diagram

Description automatically generated

**Area Under a Curve**