



# CALCULUS

8.1 WE WILL USE THE BOOK EXAMPLES  
TO BE OUR NOTES

8.2 INTEGRATION BY PARTS

$$\int u \, dv = uv - \int v \, du$$

↓

PICK  $u$  TO BE EASY DERIVATIVE, AND  $du$   
PICK  $dv$  TO BE EASY INTEGRAL, AND  $v$

INTEGRAL AS THE  $E-1$  SHOULD BE  
EASIER (OR AT LEAST SAME DIFFICULTY)  
OF WHAT YOU STARTED WITH.

OPPOSITE OF PRODUCT RULE

$$\frac{d}{dx} uv = u \, dv + v \, du$$

IF YOU DID INTEGRALS ON BOTH SIDES  
INTEGRALS CANCEL DERIVATIVES ON LEFT  
TO MAKE  $uv = \int u \, dv + \int v \, du$   
IF WE PUT THIS  $\int$  ABOVE, IT  
WOULD BE THE FORMULA ABOVE

BOOK EXAMPLES 1, 2, 4, 5, 6, 7, 8

8.3

USE BOOK EXAMPLES AS NOTES

BOX ON PG 527 IS WORTH A READ

8.5

USE BOOK EXAMPLES AS NOTES

1, 2, 3, 4, 5, 6, 8