

# The Chain Rule



## Question

Select the appropriate chain rule for computing  $\frac{\partial w}{\partial u}$  where  $w = w(x, y)$ ,  $x = x(u)$ , and  $y = y(u, v)$ .

- A.  $\frac{\partial w}{\partial u} = \frac{\partial w}{\partial x} \frac{\partial x}{\partial u} + \frac{\partial w}{\partial y} \frac{\partial y}{\partial u}$
- B.  $\frac{\partial w}{\partial u} = \frac{\partial w}{\partial x} \frac{dx}{du} + \frac{\partial w}{\partial y} \frac{\partial y}{\partial u}$
- C.  $\frac{\partial w}{\partial u} = \frac{\partial w}{\partial x} \frac{\partial x}{\partial u} + \frac{\partial w}{\partial y} \frac{\partial y}{\partial u} + \frac{\partial w}{\partial y} \frac{\partial y}{\partial v}$
- D.  $\frac{\partial w}{\partial u} = \frac{\partial w}{\partial x} \frac{dx}{du} + \frac{\partial w}{\partial y} \frac{\partial y}{\partial u} + \frac{\partial w}{\partial y} \frac{\partial y}{\partial v}$