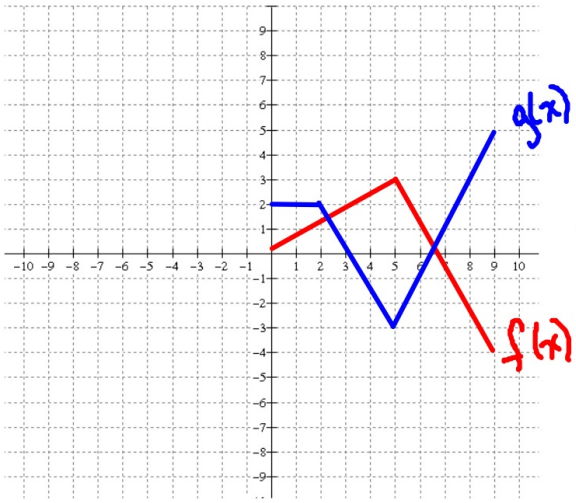
ID-8

Derivatives Using tables and Graphs



let $P(x) = f(x)\,g(x)$

find $P'(4)$

$P'(4) = f(4)\,g'(4) + g(4)\,f'(4)$

$(2.5)(-\frac{5}{3}) + (-1.5)(\frac{3}{5})$

$(\frac{5}{2})(-\frac{5}{3}) + (-\frac{3}{2})(\frac{3}{5})$

$\frac{-25}{6} + \frac{-9}{10}$

$\frac{-125}{30} + \frac{-27}{30} = \boxed{\frac{-152}{30}}$

$P'(5) =$ undefined

Page 1

Table

x	u	v	u'	v'
2	1	2	3	4
4	-2	1	-1	0

a) $P(x) = u \cdot v$

$P'(2) = uv' + vu'$

$(1)(4) + (2)(3)$

$4 + 6$

10

b) $Q(x) = \frac{u}{v}$

$Q'(4) = \frac{vu' - uv'}{v^2}$

$= \frac{1(-1) - (2)(0)}{1^2}$

$= -1$

Page 2