

# PROBLEMS | MULTIVARIABLE CHAIN RULE

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FINE

FIND $\frac{dz}{dt}$ WITH THE CHAIN RULE	
1	$z = 2x - y, x = \sin t, y = 3t$ $z = x \sin y, x = e^t, y = \pi t$ $z = xy + y^2, x = t^2, y = t + 1$ $z = \ln\left(\frac{x^2}{y}\right), x = e^t, y = t^2$
FIND $\frac{dw}{dt}$ WITH THE CHAIN RULE	
2	$w = x^2 + y^2 + 2z^2, x = t + 1, y = \cos t, z = \sin t.$

NICE

1	SUPPOSE $f$ IS A DIFFERENTIABLE FUNCTION OF $x$ AND $y$ AND DEFINE $G(U, V) = f(3u - v, u^2 + v)$ . FIND $\frac{\partial g}{\partial u} \Big _{(u,v)=(2,-1)}$ AND $\frac{\partial g}{\partial v} \Big _{(u,v)=(2,-1)}$ GIVEN:				
	$\$(X,Y)\$$	$\$F\$$	$\$G\$$	$\$\{F\}_{\{X\}}\$$	$\$\{F\}_{\{Y\}}\$$
	$\$(2,-1)\$$	$\$6\$$	$\$7\$$	$\$1\$$	$\$9\$$
	$\$(7,3)\$$	$\$4\$$	$\$2\$$	$\$-3\$$	$\$5\$$

