MA 227-103 — Summer 2017 — Dr. Clontz

Name:	Exercise Type:
J#:	**Quiz**
Date: **2017 June 21**	

Standard: This student is able to...	Mark:
C05: MulivarCalc. Compute and apply the partial derivatives, gradient, and directional derivatives of a multivariable real-valued function.	
3/4 ⋆ reattempt due on:	

Find rate of change of $f(x,y,z) = 2yz - 3x^2z$ at the point $\langle 1,0,3\rangle$ as the variables change in the direction of $\mathbf{u} = \left\langle \frac{2}{3}, \frac{1}{3}, -\frac{2}{3}\right\rangle$.

Name:	Exercise Type:
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Standard: This student is able to...	Mark:
C06: ChainRule. Apply the multivariable Chain Rule to compute derivatives and find normal vectors.	
1/4 ⋆ reattempt due on:	

Let $f(x,y)=x^3y+2xy^2$ and $\mathbf{r}(t)=\langle 2t,t+1\rangle$. First find $f(\mathbf{r}(t))$ in terms of t, and then take its derivative and let $t=0$ to show that $\frac{df}{dt}(0)=4$.

Now, verify the Chain Rule by showing that $\nabla f(\mathbf{r}(0))\cdot\mathbf{r}'(0)=4$ also.