Name:	Exercise Type:
J#:	**Quiz**
Date: **2017 July 20**	

Standard: This student is able to...	Mark:
C11: LineInt. Compute and apply line integrals.	
3/4 ⋆ reattempt due on:	

Recall that if C is oriented counter-clockwise, then flux may be computed with the line integral $\int_C \mathbf{F}\cdot\mathbf{n}\,ds = \int_C (M\,dy - N\,dx) = \int_{t=a}^{t=b}(M\frac{dy}{dt} - N\frac{dx}{dt})\,dt$. Find the flux of the vector field $\mathbf{F} = \langle x^2, xy\rangle$ around the circle $x^2+y^2=16$.

Name:	Exercise Type:
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Standard: This student is able to... **C12: FundThmLine.** Apply the Fundamental Theorem of Line Integrals. 2/4 ⋆ reattempt due on:	Mark:

Find $\int_C \mathbf{F} \cdot d\mathbf{r}$ where $\mathbf{F} = \langle e^{x+2z} + 4y^2, 8xy, 2e^{x+2z} - 3 \rangle$ and C is the elliptical curve formed by the intersection of the cylinder $y^2 + z^2 = 7$ and the plane $3x + 2y - \sqrt{3}z = \pi$. (Hint: what's the only important property of the curve?)

Name:	Exercise Type:
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Standard: This student is able to... **S09: ParamSurf.** Parametrize surfaces in three-dimensional Euclidean space. 1/3 ⋆ reattempt due on:	Mark:

Use the spherical coordinate transformation $\mathbf{s}(\rho,\phi,\theta)=\langle\rho\sin\phi\cos\theta,\rho\sin\phi\sin\theta,\rho\cos\phi\rangle$ to find a parametrization $\mathbf{r}(\phi,\theta)$ for the hemispherical surface $x=\sqrt{4-y^2-z^2}$. You may orient this surface however you like, but make sure to give appropriate bounds for ϕ,θ.