Name_____ ID_____

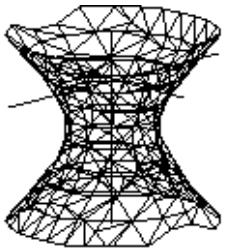
MATH 251	Quiz 2	Fall 2006
Sections 507		P. Yasskin

1-5	/25

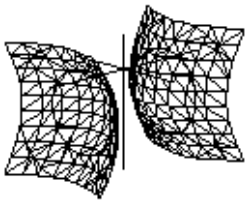
Multiple Choice (5 points each)

1. Which of the following is the graph of the quadric surface $x^2 - y^2 - z^2 - 2z - 2 = 0$?

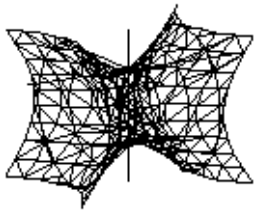
a.



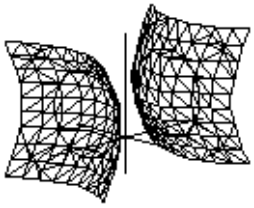
c.



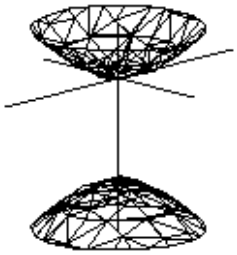
e.



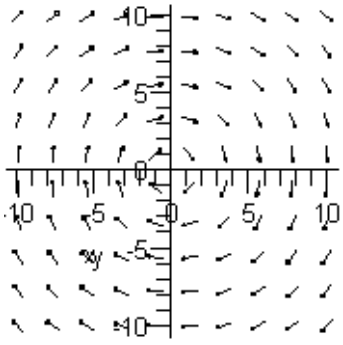
b.



d.



2. The plot at the right represents which vector field?



a. $\vec{A} = \langle -y, x \rangle$

b. $\vec{B} = \left\langle \frac{-y}{\sqrt{x^2+y^2}}, \frac{x}{\sqrt{x^2+y^2}} \right\rangle$

c. $\vec{C} = \langle y, -x \rangle$

d. $\vec{D} = \left\langle \frac{y}{\sqrt{x^2+y^2}}, \frac{-x}{\sqrt{x^2+y^2}} \right\rangle$

e. $\vec{E} = \langle x, -y \rangle$

3. Compute $\int x\,ds$ along the curve $\vec{r}(t) = \langle t, t^2, t^2 \rangle$ between $(0,0,0)$ and $(1,1,1)$.

a. $\frac{13}{12}$

b. $\frac{9}{8}$

c. $\frac{13}{8}$

d. $\frac{27}{16}$

e. $\frac{9}{16}$

4. Compute $\int yz\,dx + xz\,dy + xy\,dz$ along the curve $\vec{r}(t) = \langle t, t^2, t^2 \rangle$ between $(0,0,0)$ and $(1,1,1)$.

a. 0

b. 1

c. 2

d. 3

e. 4

5. Compute $\int \vec{F} \cdot d\vec{s}$ for $\vec{F} = \left\langle \frac{-y}{\sqrt{x^2+y^2}}, \frac{x}{\sqrt{x^2+y^2}} \right\rangle$ once counterclockwise around the circle $x^2 + y^2 = 4$.

a. $\frac{\pi}{4}$

b. $\frac{\pi}{2}$

c. π

d. 2π

e. 4π