Name:_____ Section:_____

Question 1 [5 marks]

Compute the line integral $\int_C \mathbf{F} \cdot d\mathbf{r}$ of the vector field

$$\mathbf{F}(x, y) = (-2y^2, x^2)$$

over the curve C from (2,0) to (0,1) along the ellipse $x^2 + 4y^2 = 4$.

Name:_____ Section:_____

Question 2 [5 marks]

Compute the line integral $\int_C \mathbf{F} \cdot d\mathbf{r}$ of the vector field

$$\mathbf{F}(x, y) = (y^3 + 2x, 3xy^2)$$

over the curve C defined by $xy^2 + x^3 + y^2 = 1$ from (1,0) to (0,1).