NAME: (print!) AAYUSHI KASERA   **Section:** _____

E-MAIL SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com (Attachment: q18FirstLast.pdf) ASAP BUT NO LATER THAN Nov. 9, 8:00pm

1. Let C be the line segment from $(0, 1)$ to $(2, 3)$, find $\int_C xy\, ds$.

$$P + t(Q-P)$$

$$(0,1) + t(2,2)$$

$$r(t) = \langle 2t, 1+2t \rangle$$

$$r'(t) = \langle 2, 2 \rangle$$

$$|r'(t)| = 2\sqrt{2}$$

$$2\sqrt{2} \int_0^1 2t + 4t^2$$

$$\left[t^2 + \frac{4}{3}t^3 \right]_0^1$$

$$2\sqrt{2}\left(1 + \frac{4}{3} \right)$$

$$\frac{7}{3}(2\sqrt{2})$$

2. Evaluate

$$\int_C xy^2\, dx + x^2 y\, dy \quad,$$

where C is $x : t^2$, $y = t^3$, $0 \le t \le 1$.

$$dx = 2t \qquad dy = 3t^2$$

$$\int_0^1 t^2 \cdot t^6 (2t) + t^4 t^3 \cdot 3t^2$$

$$2t^9 + 3t^9$$

$$\int_0^1 5t^9 = \frac{t^{10}}{2} = \frac{1}{2}$$