"QUIZ" for Lecture 18

NAME: (print!) _____ **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 $\int_C xy\,ds$.

$x = r\cos t \qquad x' = -\sin t$

$y = r\sin t \qquad y' = \cos t$

$r = 1$

$$\sqrt{(r\sin t)^2 + r(\cos t)^2} = \sqrt{1} = 1$$

$$\int_0^{\pi} (r\sin t)(\cos t)\,dt = 0$$

2. Evaluate

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

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

$$\int_0^1 t^{11}\,dt + t^7\,dt$$

$$= \frac{1}{12}t^{12} + \frac{1}{8}t^8\Big|_0^1 = \frac{5}{24}$$