

APPM 2350—Exam 1  
Wednesday Feb 9th, 6:30pm-8pm 2022

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This exam has 5 problems. Please start each new problem at the top of a new page in your blue book. Show

Problem 5 (16 points)

The following questions are not related:

- (a) Give an example of ONE vector-valued function  $\mathbf{r}(t)$  that traces out the curve of intersection of the surfaces  $x = 4y^2$  and  $x^2 = 2z - 6y^2$
- (b) Give an example of ONE vector-valued function,  $\mathbf{r}(t)$ ,  $t \geq 0$  with ALL of these specified properties (or explain why such a function does not exist):
- $\mathbf{r}(0) = \langle 0; 4; 0 \rangle$
  - and  $\|\mathbf{r}'(t)\| = \frac{1}{4}$  for all  $t \geq 0$
  - and  $\mathbf{B}(t) = \mathbf{i}$  for all  $t \geq 0$
  - and  $a_T(t) \leq 0$  for  $t > 0$

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End Of Exam

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