

**MATH 22 HW 4**  
**PLEASE SUBMIT ON GRADESCOPE AT ANY TIME BEFORE**  
**WEDNESDAY, OCTOBER 14 AT 5:59PM EDT**

*To earn full credit, show all work and explain your answers carefully. Make your arguments using complete sentences.*

*Technology should not be used for linear algebra computations. One exception: you may use technology to row-reduce matrices.*

*The graders will take away 1 point for every question submission on Gradescope that is not properly tagged.*

- (1) (a) (5 points) Lay, Section 2.3, 12.
- (b) (5 points) Lay, Section 2.3, 37.

- (2) (a) (5 points) Lay, Section 4.1, 33.
- (b) (5 points) Lay, Section 4.2, 16.

- (3) (a) (5 points) Lay, Section 4.3,14
- (b) (5 points) Lay, Section 4.3, 24.
- (c) (5 points) Find a basis for  $M_{3 \times 2}$ , the vector space of  $3 \times 2$  matrices, and be sure to explain why the list of vectors you give is a basis.