

MAT 142 Problem set

Unit: Sets

Topic: Comparing Sets

Directions: Solve the following problems. Please show your work and explain your reasoning.

1. Let $U = \{ \text{New York (NY), Illinois (IL), Arizona (AZ), Kansas (KS), California (CA), Texas (TX), Virginia (VA), Maryland (MD), Florida (FL)} \}$

$$D = \{ \text{NY, IL, AZ, VA} \}$$

$$E = \{ \text{NY, IL, AZ, VA, FL} \}$$

$$F = \{ \text{AZ, CA, TX, FL} \}$$

- a. Is $D \subset E$? Why or why not?
- b. Is $D \subseteq U$? Why or why not?
- c. Is $F \subseteq F$? Why or why not?
- d. Is F equivalent to D ? Why or why not?
- e. How many subsets does the Universal Set U have?