

This quiz covers material from section 6.3. Show your work. It is acceptable if you set up but do not compute the answers.

1. (2 points) A class of students contains twelve freshmen, fifteen sophomores, three juniors, and one senior. A team needs to be formed that has one student from each year. How many ways are there of doing this?

$$12 \cdot 15 \cdot 3 \cdot 1$$

2. (3 points) A Presidential candidate is campaigning across the nation in preparation for the upcoming primary election. She has four days and has to choose one of the fifty states to visit each day. How many possible itineraries are there if,

- a. (1 pt) she can visit any state more than once?

$$50 \cdot 50 \cdot 50 \cdot 50 = 50^4$$

- b. (2 pts) she can only visit each state once during her trip?

$$50 \cdot 49 \cdot 48 \cdot 47 = P(50, 4)$$

3. (3 points) The serial number on dollar bills consists of eight digits (0–9) and two letters (A–Z). How many serial numbers are possible if,

- a. (1 pt) any combination is allowed?

$$10^8 \cdot 26^2$$

- b. (2 pts) the last letter must be a Z?

$$10^8 \cdot 26$$