

Discrete. Spring 20 Quiz 9. Name _____ Time _____

Show all work for full or partial credit.

1.

Given $A = \{7, 9, 10\}$; and $B = \{5, 4, 7, 10\}$. Find the following, where \mathcal{P} indicates the power set:

- $|\mathcal{P}(B - A)|$

- $|\mathcal{P}(B) \times \mathcal{P}(A)|$

2. How many ways are there to order a 2-scoop ice cream cone? There are 3 flavors (chocolate, vanilla, and rum-raisin), but you must choose twice (for the two scoops, which can both be the same flavor, and order of the scoops doesn't matter—the server puts them on however he likes.) There are two kinds of cones, waffle and regular. You can order sprinkles or no sprinkles.

3. How many ways are there to order a 2-scoop ice cream cone? There are 3 flavors, but you must choose twice (for the two scoops, and order of the scoops doesn't matter—the server puts them on however he likes.) This time though you may not choose chocolate for both scoops! If you choose chocolate for one, the other must be vanilla or rum-raisin. There are two kinds of cones, waffle and regular. You can order sprinkles or no sprinkles.

4. How many pin numbers are there possible if you must choose 4 digits in a row, but cannot start with a 0, but can use any other digits you want?