

MATH 1313 Review for Test -3

What is covered: **Chapters 4, 5, 6.1 – 6.4**

There will be a **formula sheet** available in the test. Please locate the sheet before you start your test.

How to Study:

Understand the material.

Solve all problems on this review sheet.

Take (and retake) the practice test.

Go over past quizzes.

1) Identify the problem:

a. Edward wants to start a savings plan through his credit union at work. He decides to put \$75 per month into the account that pays 4.375% annual interest compounded monthly. How much will he have in the account at the end of 3 years?

b. John purchased a car for \$20,000 and made a down payment of \$2,000. He financed the rest for 5 years at 12% compounded monthly. What is his monthly payment?

c. Pam purchased a car with no down payment. She will pay \$500 every month for 5 years. If the bank charges 8% interest compounded monthly, what was the cash price of the car?

2) Steven wants to have \$7,000 to pay for a trip he plans to take in 2 years.

a) His bank pays 4.25% annual interest compounded monthly. How much should he deposit today in order to have the money available in 2 years?

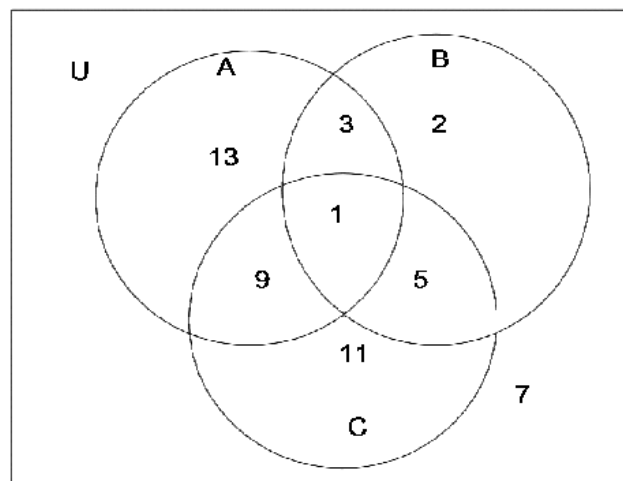
b) He decides to deposit some money twice a year. If his bank pays 4% annual interest compounded semi-annually, how much should he deposit semi-annually to have the money available in 2 years?

3) Mike bought two vans to start a business. He made a down payment of \$5,000. He will pay \$2,000 monthly for 2 years. If the bank is charging 8% compounded monthly, what was the cash price of the vans?

4) Of the 170 students enrolled in Finite Math, 148 have had College Algebra, 40 have had Business Calculus and 28 have had both classes.

- How many students are enrolled in Finite Math?
- How many students have taken exactly one class?
- How many students have taken College Algebra only?

5) Given the following Venn diagram, find:



- $n(A^c \cap B)$
- $n(A^c \cup B)$
- $n((A \cup B) \cap C^c)$
- $n((A \cap C)^c \cap B)$
- $n((A \cap C) \cup B^c)$

6) Let E and F be events of a sample space S. Let $P(E^c) = 0.55$, $P(F) = 0.26$, $P(E \cap F) = 0.12$. Find $P(E \cup F)$.

7) Let E and F be events of a sample space S. Let $P(E^c) = 0.48$, $P(F \cap E^c) = 0.28$, $P(E \cap F) = 0.12$. Find $P(E \cup F^c)$.

8) A committee has viewed 8 proposals and they have to rank the top 4. In how many ways can this be done?

9) In how many ways can you seat 8 people in a row if there are 14 chairs in that row?

10) You went to a bookstore to buy some books. There are 8 history and 5 science fiction books that you like. In how many ways can you choose 3 history and 2 science fiction books?

11) A box contains 6 red and 8 blue cards. In how many ways can 3 red cards be chosen?

12. Toss a coin 10 times.

a) In how many outcomes do exactly 6 heads occur?

b) In how many outcomes do at most 2 heads occur?

c) What is the probability that exactly 6 heads occur?

d) What is the probability of getting at least one head?

13) A department store receives a shipment of 20 printers, 5 of which are defective. A customer buys 10 printers. What is the probability that at least 4 of the printers he bought are defective?

14) A club consists of 15 junior and 20 senior students. 5 students are chosen to represent the club. In how many ways can at least one of the senior students be in the group?

15) You have a jury pool of 40 individuals. 22 are women and 18 are men. The jury needs to have 12 people.

a. In how many ways can at least one woman be chosen for the jury?

b. What is the probability that exactly 4 women will be chosen?