

Math 115 — Finite Mathematics**Past Questions 1**

Time: 90 minutes

Total: 100 marks

No calculators

Name: _____

Student ID: _____

Sections 1.1–1.2, 4.1–4.3, 5.1–5.3. Answer all questions and show all your work. Calculators and mobile phones are not allowed.

Practice paper compiled from past examination questions (2018–2024), in the current exam format.

Written Questions — 100 marks**Question 1 [15 marks]**

Solve the following inequality

$$\frac{1}{5}(x+8) < \frac{1}{2}(3x-2) \leq \frac{7}{3}$$

and write the solution in the interval form.

Question 2 [10 marks]

Solve the following system

$$4x + 3y = 5$$

$$3x - y = 7.$$

(a) using substitution.

(b) using elimination by addition.

Question 3 [15 marks]

Find the slope-intercept form of the equation of the line through the points $(2, 5)$ and $(5, 7)$. Write the resulting equation in the form $Ax + By = C$, where A, B, C are integers and $A > 0$.

Question 4 [20 marks]

Solve the following linear system using Gauss-Jordan elimination method:

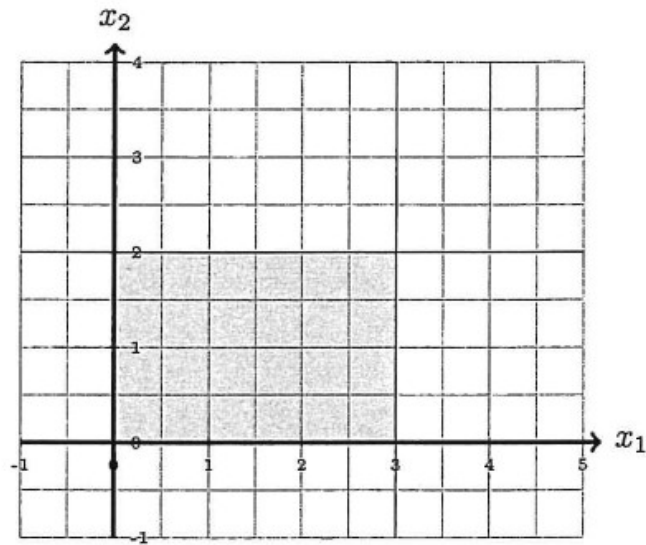
$$2x_1 + x_2 + 3x_3 = 5$$

$$3x_1 + 2x_2 + 4x_3 = 7$$

$$2x_1 + x_2 + 5x_3 = 10$$

Question 5 [10 marks]

Write the inequalities defining the following region

**Question 6** [15 marks]

A psychologist uses two types of boxes with mice and rats. The amount of time (in minutes) that each mouse and each rat spends in each box per day is given in the table:

Box	Time: Mice	Time: Rats	Maximum Time Available per Day
Box A	10 min	20 min	400 min
Box B	20 min	10 min	320 min

What is the maximum number of mice and rats that can be used in this experiment? How many mice and how many rats produce this maximum?

Question 7 [15 marks]

A total of 200 coins in 5, 10 and 20 fils denominations must be used to make a payment of 2 KD. Knowing that we have to use at least one coin of each value, find out in how many ways this can be done.

End of paper

تم إعداد هذا النموذج من منصة مُرشد،
للاشتراك في مادة Finite 115 تواصل معنا على رقم المنصة: 41110098