

Math 109-D04
Test 3

SUBMISSION DEADLINE: 2:30pm Pacific Time
Submit on D2L

Number of Questions: 5
Total Marks: 18

Show all your work for full marks.

You MAY use the course website (notes, videos etc) and your own notes

You may NOT copy from others (classmates, tutors, Google, Chegg etc)

Submit jpg or pdf files

Feel free to handwrite your solutions and take photos of your work

1. [3 marks] Find the equation of the line through the points $(7, 12)$ and $(9, 7)$.
2. [3 marks] Find the intersection of the lines $3x + y = 17$ and $2y = 4x - 36$
3. [4 marks] A company makes backpacks and purses. Each backpack takes 6 hours to manufacture and 3 hours to test and generates \$19 of revenue. Each purse takes 5 hours to manufacture and 4 hours to test and generates \$71 of revenue. Each day the company has 132 manufacturing hours and 102 testing hours available. Let x be the number of backpacks made each day. Let y be the number of purses made each day.
 - a) Write down the function that represents daily revenue.
 - b) List all the inequalities that apply.
 - c) The feasible set has vertices $(0, 0)$, $(0, 25.5)$, $(22, 0)$ and $(2, 24)$. What is the maximum daily revenue?
4. [4 marks] Solve the system using A^{-1} :

$$4x + 5y = 24$$

$$6x + 9y = 48$$

5. [4 marks] Solve using Gauss-Jordan Elimination:

$$x + 4y + 2z = 20$$

$$2x + 10y + 6z = 56$$

$$3x + 6y + 8z = 52$$