

Quiz 1

Firstname Lastname: _____ **ID#** _____ **Seat#** _____

- *Answer all questions based on our lectures to date.*
- *Don't sit next to someone you know.*
- *Don't turn the paper over until you are asked to.*
- *When you finish, put this side up once again.*

(1) According to the syllabus,¹

— using a smartphone in class is academic misconduct. (← **True** or **False**)

— a finding of academic misconduct will result in an F. (← **True** or **False**)

(2) The polynomial $P(x, y) = 10x^2y + 25y^2 - 15x - 12$ (← **does** or **does not**)
have an integer root² because .

(3) Consider the graph K_{10} that is a clique on 10 vertices: it has 10 vertices and edge between each pair of them.³ Does this graph have a **perfect matching**? (← **yes** or **no**)

Consider the graph K_{11} that is a clique on 11 vertices: it has 11 vertices and edge between each pair of them. Does this graph have a **perfect matching**? (← **yes** or **no**)

(4) What's an **alphabet**?

(Give a mathematically formal definition.)

(5) How many **pairs** of strings (x, y) are there such that $xy = x \circ y = 1111$?

¹The online course-information sheet

²Two integers x and y such that $P(x, y) = 0$.

³So K_{10} has $\binom{10}{2} = C(10, 2) = 10 \cdot 9/2 = 45$ edges in all.