

# Quiz 1

This quiz is graded out of 6 marks. No books, calculators, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

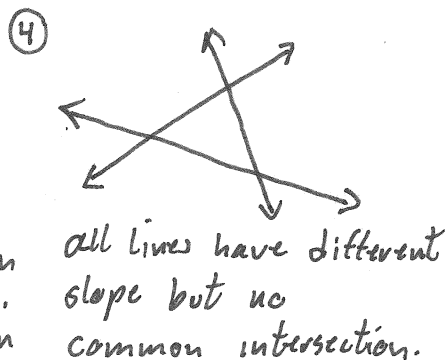
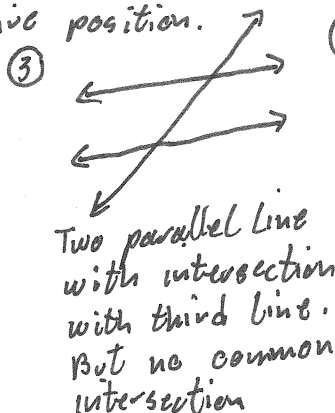
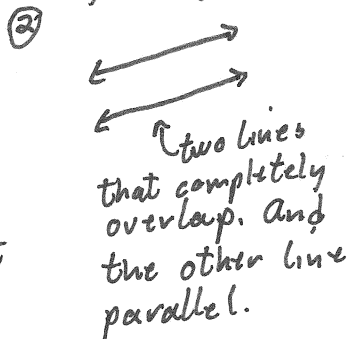
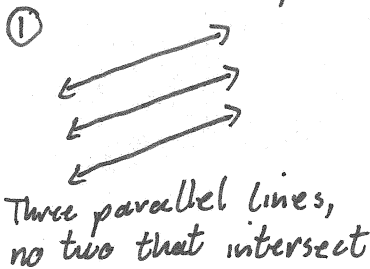
Question 1. §1.1 #24 Consider the system of equations

$$\begin{cases} ax + by = k \\ cx + dy = l \\ ex + fy = m \end{cases}$$

Discuss the relative positions of the lines  $ax + by = k$ ,  $cx + dy = l$ , and  $ex + fy = m$  when

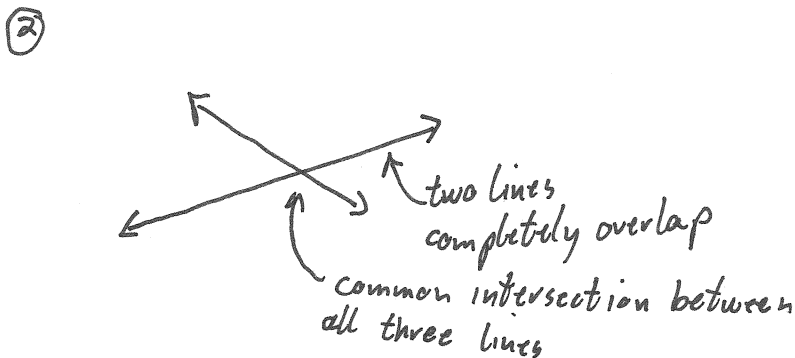
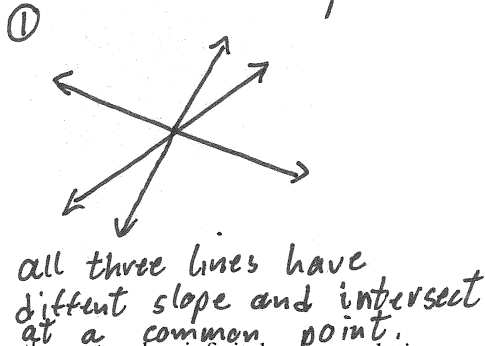
a. the system has no solutions.

There are four possibility for the relative position.



b. the system has exactly one solution.

There are two possibility for the relative position.



c. the system has infinitely many solutions.

Only one possibility for the relative position. all lines are identical.

