

$O(n^2)$ by hashing for lines.

lower bound: deciding whether there exist 3 collinear points on the plane is 3SUM-hard [1], so this problem is also 3SUM-hard.

References

- [1] Anka Gajentaan and Mark H Overmars. On a class of $O(n^2)$ problems in computational geometry. *Computational geometry*, 5(3):165–185, 1995.