Check your understanding

Let f be a function of x and y. Fix x_0 and y_0.

29. If $f(x, y) = ax + by + c$ is linear, so that the graph of f is a plane, then what is the relation between the graph of f and the tangent plane to f at a point $(x_0, y_0, ax_0 + by_0 + c)$?

    (a) The graph and the tangent plane are the same.

    (b) The graph and the tangent plane are different.

    (c) Sometimes they are the same and sometimes they are different.

Answer: (a).

Explanation: But this is true only for linear functions.