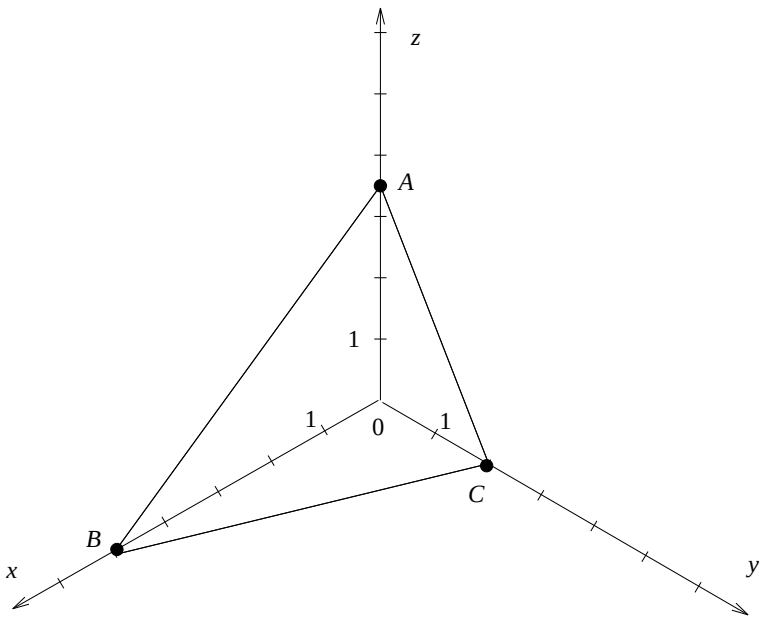
**Math 126B** **Calculus With Analytic Geometry III** **Spring 1995**

QUIZ #4 SOLUTIONS

You are given that $z = f(x, y)$ is a linear function of $x$ and $y$, and its graph is the plane shown below, which goes through points $A$, $B$, and $C$. By inspecting the graph, determine the following partial derivatives of $f(x, y)$ at the points indicated:

1. $\dfrac{\partial f}{\partial x}(1, 0)$: This is the slope at $x = 1$ of the curve obtained by intersecting the graph of $f(x, y)$ with the vertical plane $y = 0$ (the $xz$-plane). From the drawing below, that intersection is the line through the points $A$ and $B$, and its slope is $-3.5/5$.

$$\frac{\partial f}{\partial x}(1, 0) = \boxed{-3.5/5}$$

2. $\dfrac{\partial f}{\partial y}(0, 1)$: Similarly, this is the slope at $y = 1$ of the line through $A$ and $C$.

$$\frac{\partial f}{\partial y}(0, 1) = \boxed{-3.5/2}$$