Classroom Voting Questions: Multivariable Calculus

12.4 Linear Functions

1. A plane has a z-intercept of 3, a slope of 2 in the x direction, and a slope of -4 in the y direction. The height of the plane at (2,3) is

   (a) -2
   (b) -8
   (c) -5
   (d) not given by this information

2. Which of the following planes is parallel to the plane $z = -2 - 2x - 4y$?

   (a) $z = -1 - 2x - 2y$
   (b) $(z - 1) = -2 - 2(x - 1) - 4(y - 1)$
   (c) $z = 2 + 2x + 4y$

3. Any three points in 3 space determine a unique plane.

   (a) True, and I am very confident
   (b) True, but I am not very confident
   (c) False, but I am not very confident
   (d) False, and I am very confident

4. Any two distinct lines in 3-space determine a unique plane.

   (a) True, and I am very confident
   (b) True, but I am not very confident
   (c) False, but I am not very confident
   (d) False, and I am very confident

5. If the graph of $z = f(x, y)$ is a plane, then each cross section is a line.

   (a) True, and I am very confident
   (b) True, but I am not very confident
   (c) False, but I am not very confident
   (d) False, and I am very confident