Math 251 **Quiz 01**

September 11, 2013; 10 minutes Name: _____

This quiz is *open-note*, but no books or calculators. On this quiz, you do not need to justify your answers in any way.

1. (3 points) You are given the following points: $A = (9, -18, -16)$, $B = (18, 0, 9)$, $C = (-6, 19, 12)$.

   (a) Which point is closest to the (x, y)-plane?

   (b) What is the distance from the (x, y)-plane to this point?

   (c) What is the distance from this point to the origin?

2. Consider the sphere $(x+2)^2 + (y-4)^2 + (z-1)^2 = 16$. For each of the following sets (a)–(f), say whether the intersection of the set with the sphere is zero points, one point, two points, a line, or a circle.

   (a) (2 points) The (y, z)-plane.

   (b) (2 points) The (x, z)-plane.

   (c) (2 points) The (x, y)-plane.

   (d) (1 point) The x-plane.

   (e) (1 point) The y-plane.

   (f) (1 point) The z-plane.