Quiz #5 Solutions

Problem 1.

(1) False [The coordinates of A do not satisfy the equation of the plane.]

(2) False [The normal vectors $\vec{n_P} = (1, -2, 1)$ and $\vec{n_Q} = (-2, 4, -1)$ are not parallel.]

(3) True [The normal vectors $\vec{n_P} = (-1, 2, 1)$ and $\vec{n_Q} = (1, 0, 1)$ are orthogonal.]

(4) False [The intersection of two distinct parallel planes is empty.]

(5) False [This is a degree 3 equation, whereas quadrics have degree 2 equations by definition.]

(6) False [The coordinates of the origin do not satisfy the equation.]

(7) False [The domain of definition of f is $D = R^2$.]

(8) True

(9) True

(10) False [The graph of f is indeed a plane, but it does not go through the origin.]