1. Parametrize all vectors perpendicular to \( v = [1, 2, 3] \). Describe this set of points. Find a vector in this set that is also perpendicular to \( w = [3, 1, -4] \).

2. Starting at the origin an airplane moves along the vector \([3, 4]\). The plane then turns and moves along the vector \([3, 3]\). Is the airplane more or less than 10 units from the origin? Explain. At what angle did the pilot turn? You can express the answer using an inverse trig function.