1. The magnitude of the vector is sqrt(2*0.5^2), or approximately 0.707.
2. x and wT do not have the same dimensions.
3. xT and w do not have the same dimensions.
4. 0.5*0.75+0.5*1.25 = 0.375 + 0.625 = 1
5. The dot product of a vector is equal to the product of magnitudes of those vectors and the cosine of the angle between them. By taking the value we found in problem 4 we can obtain the angle between the two vectors:
   $|A||B|\cos(\Theta) = 1$
   $\cos(\Theta) = 0.97029$
   $\Theta = \arccos(97029) = 14.0016$ degrees