

Name:..... Section: ID Number:.....

Q1: Given that $V = \langle 1, 2, 3 \rangle$ and $U = \langle 1, 0, 1 \rangle$. Find *(2 points each)*

- (i) $V - U$; (ii) the angle between V and U ;
- (iii) a vector orthogonal to U ; (iv) $\|Proj_V(U)\|$.

Q2: Is it true that $U \cdot V = V \cdot U$ for any two vectors U and V ? Justify your answer. *(4 points)*

\Rightarrow Please Continue

Q3: Let U and V be two vectors in the same direction. Prove that

(3 points)

$$\|U + V\| = \|U\| + \|V\|.$$