

The majority of the credit you receive will be based on the completeness and the clarity of your responses. **Show all of your work and justify your solutions as much as possible.**
This is a 15 minute quiz and has 2 questions, for a total of 10 points

- (5 points) 1. Find a nonzero vector orthogonal to the plane containing the three points $P(0, -2, 0)$, $Q(4, 1, -2)$, and $R(5, 3, 1)$.

- (5 points) 2. Determine if the points $P(-2, 1, 0)$, $Q(2, 3, 2)$, $R(1, 4, -1)$, and $S(3, 6, 1)$ lie in the same plane.