## Math 2263, Quiz 1

You must show all work for full credit, you have 15 min to finish it.

1. $(5 \mathrm{pt})$ Find the angle between $\mathbf{a}$ and $\mathbf{b}$ where $\mathbf{a}=(1,2,2), \mathbf{b}=(1,1,0)$.
2. $(5 \mathrm{pt})$ Find a non-zero vector orthogonal to the plane through the points $P(1,0,-1), Q(1,1,-2), R(1,-1,0)$, and find the are of triangle PQR .
3. $(5 \mathrm{pt})$ Find an equation of the plane through the points $(0,0,0),(1,3,0),(2,6,1)$.
