Worksheets
9/14/2017

1. Compute the area of the parallelogram spanned by $\vec{a} = \langle 1, 2 \rangle$ and $\vec{b} = \langle 1, -1 \rangle$.

2. Compute the volume of the parallelepiped spanned by $\vec{a} = \langle 2, 0, 1 \rangle$, $\vec{b} = \langle 1, 1, 1 \rangle$ and $\vec{c} = \langle 1, -1, 0 \rangle$.

3. Compute the distance from point $A = (1, 2)$ to the line $x - 3y = 1$.

4. Compute the distance from point $A = (1, 1, 0)$ to the plane $x - y + z = -1$.

5. Write the equation of the plane which

   i) passes through point $A = (1, 0, 1)$ and is perpendicular to vector $\vec{a} = \langle 2, 1, -1 \rangle$.

   ii) passes through points $A = (1, 0, 1)$, $B = (0, 1, 1)$, and $C = (2, 0, -1)$.

iii) passes through point $A = (1, 0, 1)$ and contains the line $l(t) = (t, 2t + 1, -t)$.

iv) passes through point $A = (1, 0, 1)$ and is perpendicular to line $l(t) = (t, 2t + 1, -t)$.

v) contains the lines $l_1(t) = (t, 2t + 1, -t)$ and $l_2(t) = (0, t, t + 1)$.