Group 1

Rebecca Kock: equation of plan, parametric equations and intersection of two lines

1.) Find the equation of a plane that goes through the point P=(2, π, -6) and is perpendicular to line:

$$\left.\begin{array}{c} x-1=2t \\ y=0 \\ z+1=3t \end{array}\right\}$$

2.) The point P= (0,3,4) is on the plane 2x-3(y-3)+7(z-4)=0. Find equations of a perpendicular line to this line through point P.

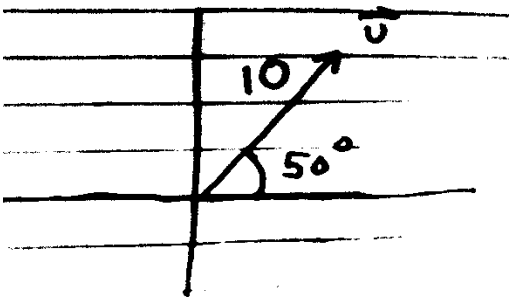
3.) Find intersection of two lines:

$$l_1:\left.\begin{array}{c} x=-1+t \\ y=2+t \\ z=1-t \end{array}\right\} \quad \text{and} \quad l_2:\left.\begin{array}{c} x=1-4s \\ y=1+2s \\ z=2-2s \end{array}\right\}$$

Eric Formica: Projections and components

1.) Calculate the vector projection of $\vec{u}=3i+5j$ and $\vec{v}=2i+7j$

2.) Find the component form of $\vec{u}$



Rebecca Alba: area of a parallelogram and area of a triangle

1.) Find the area of the triangle determined by the points: P,Q, and R. Find a unit vector perpendicular to plane PQR. P= (2,-2,1) Q=(-1,0,-2) and R=(0,-1,2)

2.) Find the area of the parallelogram with vertices:

A(0,0,0) , B(4,3,5) , C(8,1,5) , D(4,-2,0)

Marena Sutton: volume of parallelepipeds and coplanarity

1.) Are the points: P=(1,0,0) , Q=(2,1,0) , R=(1,-1,1) and S=(2,2,5) coplanar?

2.)Find the volume of the parallelepiped with edges: P=(1,1,1) , Q=(2,0,3) , R=(4,1,7) and S=(3,-1,-2).

Chun Chou: angle btw 2 vectors and collinearity

1.) compute the angle between $\vec{u}=<1,0,-1>$ and $\vec{v}$=k-j

2.) Determine if the points P,Q, and S are in a line:

P=(3,0,1) , Q=(0,5,8) , R=(6,-15,22)

Zayd El-Ali: distance and magnitude and basic operations of vectors

1.) Find the magnitude of $\vec{v}$ represented by $\overrightarrow{PQ}$: P=(3,-4) and Q=(5,2)

2.) Find the dot product and cross product of the two vectors a and b. $\vec{a} =< 3, -1,5 >$ and $\vec{b} =< -2,4,3 >$

Linda Grimes: distance among objects

1.) Find the distance from the plane 6x+y+z=48 to the plane 6x+y+z=6.

2.) Find the distance from the point P=(2,-1,1) to the line that passes through the point Q=(-1,1,6) and parallel to the vector $\vec{v} = -i - 2j + 3k$