

Name: \_\_\_\_\_ ID: \_\_\_\_\_

1. Find a vector that is perpendicular to both  $\mathbf{a} = 3\mathbf{i} + 3\mathbf{j} - 3\mathbf{k}$  and  $\mathbf{b} = 3\mathbf{i} - 3\mathbf{j} + 3\mathbf{k}$ .

2. Find the point at which the line with parametric equations

$$x = 2 + 3t,$$

$$y = -4t,$$

$$z = 5 + t$$

intersects the plane

$$4x + 5y - 2z = 18.$$