

$\mathbf{r}(u, v) = (u + v)\mathbf{i} + 2u^2\mathbf{j} + (u - v)\mathbf{k}$ .  
 $\mathbf{r}_u = \mathbf{i} + 4u\mathbf{j} + \mathbf{k}$  and  $\mathbf{r}_v = \mathbf{i} - \mathbf{k}$ , so  $\mathbf{r}_u \times \mathbf{r}_v = -4u\mathbf{i} + 2\mathbf{j} - 4u\mathbf{k}$ . Since the point  $(2, 2, 0)$  corresponds to  $u = 1$ ,  $v = 1$ , a normal vector to the surface at  $(2, 2, 0)$  is  $-4\mathbf{i} + 2\mathbf{j} - 4\mathbf{k}$ , and an equation of the tangent plane is  $-4x + 2y - 4z = -4$ .

