

Lecture 20 Quiz

16. 40 =

$$r = v^2 \hat{i} + (u+v) \hat{j} + v^2 \hat{k} \quad 1, 2, 1$$

$$r_u = 0 \hat{i} + \hat{j} + 2v \hat{k} \quad 1 = v$$

$$r_v = 2v \hat{i} + \hat{j} + 0 \hat{k} \quad 1 = u$$

$$r_u = \langle 0, 1, 2 \rangle$$

$$r_v = \langle 2, 1, 0 \rangle$$

$$\begin{array}{ccc} \hat{i} & \hat{j} & \hat{k} \\ 0 & 1 & 2 \\ 2 & 1 & 0 \end{array}$$

$$\hat{i}[0-2] - \hat{j}[0-4] + \hat{k}[0-2]$$

$$-2\hat{i} + 4\hat{j} - 2\hat{k}$$

$$\langle -2, 4, -2 \rangle$$

$$-2(x-1) + 4(y-2) + 1(z-1)$$

$$-2x + 2 + 4y - 8 + z - 1 = 0$$

$$\boxed{-2x + 4y + z = 7}$$

Lecture 22 Quiz

$$1. g = 1 - x^2 - y^2$$

$$P = xy \quad Q = yz \quad R = zx$$

$$\iint (-xy - 2x - yz - 2y + zx) \, dA$$

$$\iint (2x^2y + (2y^2 + x)z)$$

Replace z

and convert to iterated,