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Quiz lecture 20

Question 1)

$$l=y^2$$

$$z=u+v$$

$$r=\langle v^2, u+v, u^2 \rangle = \langle 1, 2, 1 \rangle$$

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

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

$$n = r_u \times r_v = \langle -2, 4, -2 \rangle$$

$$x-2y+z=-2$$

Question 2)

$$\theta = \langle -2, 2, 0 \rangle$$

$$P_r = \langle -2, 0, 2 \rangle$$

$$P_\theta \cdot P_r = \langle 4, 4, 4 \rangle$$

$$d=8$$

$$\int \int (4-x-1) \sqrt{1+(-1)^2+(-1)^2} dx$$

$$= 8\sqrt{3}$$