

KUIS 2 GA D

1. Change the following from cylindrical to spherical coordinates

a) $(1, \frac{\pi}{2}, 1)$

b) $(-2, \frac{\pi}{4}, 2)$

2. Sketch the graph of given cylindrical or spherical equation

- $r^2 \cos^2 \theta + z^2 = 4$

3. Find the symmetric equations of the line of intersection of given pair of planes

- $x - 3y + z = -1, 6x - 5y + 4z = 9$

4. Consider the curve

$$\mathbf{r}(t) = t \sin t \mathbf{i} + 3t \mathbf{j} + 2t \cos t \mathbf{k}$$

a) Show that the curve lies on a sphere centered at the origin

b) Dimanakah garis singgung di $t=1/4$ memotong bidang xz