

Calc D - Warm Up - Answers

① $z = 2y$, y -axis

$$r(y) = 2y \Rightarrow \underline{x^2 + z^2 = 4y^2}$$

↑ In terms of y

② $z = 2y$, z -axis

$$y = \frac{z}{2} \Rightarrow \underline{x^2 + y^2 = \frac{z^2}{4}}$$
$$r(z) = \frac{z}{2} \quad \leftarrow \text{In terms of } z$$

③ $2z = \sqrt{4-x^2}$, x -axis

$$r(x) = \frac{\sqrt{4-x^2}}{2} \Rightarrow \underline{y^2 + z^2 = \frac{4-x^2}{4}}$$

↑ In terms of x

④ $xy = 2$, x -axis

$$r(x) = \frac{2}{x} \Rightarrow \underline{y^2 + z^2 = \frac{4}{x^2}}$$

↑ In terms of x

⑤ $z = \ln y$, z -axis

$$y = e^z \Rightarrow \underline{x^2 + y^2 = e^{2z}}$$

↑ In terms of z