12.1, number 65: **Find the distance from the point** $P = (x, y, z)$ **to**

(a) **the x-axis,**

Answer: The point on the x-axis closest to (x, y, z) is $(x, 0, 0)$. The distance between (x, y, z) and $(x, 0, 0)$ is $\boxed{\sqrt{y^2 + z^2}}$.

(b) **the y-axis**

Answer: The point on the y-axis closest to (x, y, z) is $(0, y, 0)$. The distance between (x, y, z) and $(0, y, 0)$ is $\boxed{\sqrt{x^2 + z^2}}$.

(c) **the z-axis.**

Answer: The point on the x-axis closest to (x, y, z) is $(x, 0, 0)$. The distance between (x, y, z) and $(0, 0, z)$ is $\boxed{\sqrt{x^2 + y^2}}$.