## Exercise 28

Do the lines $(x, y, z)=(t+4,4 t+5, t-2)$ and $(x, y, z)=(2 s+3, s+1,2 s-3)$ intersect?

## Solution

The lines will intersect if their components are equal for some values of $t$ and $s$. Setting $t=-1$ and $s=0$ results in

$$
x=3 \quad \text { and } \quad y=1 \quad \text { and } \quad z=-3
$$

for both lines. Therefore, the point $(3,1,-3)$ is where the lines intersect.

