

Linear Functions

Let A denote a real number, and consider the system of equations:

$$x + y + z = 10$$

$$2x - 2y + 5z = 7$$

$$Ax + Ay + Az = 5$$

Is it possible for this system to have infinitely many solutions?

- (a) Yes
- (b) No

Answer: Yes

- If $A = 1/2$ then you have two equations and three unknowns.
- This would work well for a graphical interpretation as well as an algebraic one.