

$$\text{I} \quad x + 4y + z = 12$$

$$\text{II} \quad 4x + y + z = 15$$

$$\text{III} \quad 2x + 3y + z = 13$$

$$(\text{IV}): (\text{I}) - (\text{III}): \quad -x - y = -1$$

$$(\text{V}): (\text{II}) - 2(\text{III}): -5y - z = -11$$

$$(\text{IV}): \boxed{y = x - 1}$$

$$(\text{V}) \boxed{z = 11 - 5y = 16 - 5x}$$