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Homework TODO
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MA244-03

Problem 28.
$$\begin{aligned} x - y &= 5 \\ 3y + z &= 11 \\ 4z &= 8 \end{aligned}$$

Proof. Start with equation 3. Divide both sides by 4:

$$4z = 8$$

$$\boxed{z = 2}$$

Substitute this into the second equation:

$$3y + z = 11$$

$$3y + 2 = 11$$

$$3y = 9$$

$$\boxed{y = 3}$$

Substitute this into the first equation:

$$x - y = 5$$

$$x - 3 = 5$$

$$\boxed{x = 2}$$

$$\boxed{(x, y, z) = (2, 3, 2)}$$

□

Problem 38.
$$\begin{aligned} 3x + 2y &= 2 \\ 6x + 4y &= 14 \end{aligned}$$

Proof. By inspection, the first equation appears to be very similar to the second.
Multiply the first equation by 2:

$$6x + 4y = 4$$

However, the second equation says that $6x + 4y = 14$. This set of equations is $\boxed{\text{inconsistent}}$. □

Problem 48TODO.
$$\begin{aligned} 3x + 2y &= 2 \\ 6x + 4y &= 14 \end{aligned}$$

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However, the second equation says that $6x + 4y = 14$. This set of equations is $\boxed{\text{inconsistent}}$. □