

**Check:**

Is  $(29, 16, 3)$  a solution of the original system?

$$\begin{aligned}x_1 - 2x_2 + x_3 &= 0 \\2x_2 - 8x_3 &= 8 \\-4x_1 + 5x_2 + 9x_3 &= -9\end{aligned}$$

Substitute and compute:

$$\begin{aligned}(29) - 2(16) + (3) &= 29 - 32 + 3 = 0 \\2(16) - 8(3) &= 32 - 24 = 8 \\-4(29) + 5(16) + 9(3) &= -116 + 80 + 27 = -9\end{aligned}$$