Looks like some of you could use a little sum'm sum'm from my current 099 lecture.
Find the line shared by the two planes.

R1 $\quad x + 3y + 2z = 2$

R2 $\quad 2x + 7y + 5z = 7$

Eliminate x from the 2nd equation.

$$\begin{array}{rr} -2R1 & -2x - 6y - 4z = -4 \\ R2 & 2x + 7y + 5z = 7 \\ \hline -2R1+R2 & y + z = 3 \end{array}$$

The new (equivalent) system

R1 $\quad x + 3y + 2z = 2$

R2 $\quad y + z = 3$

y + z = 3 implies y = - z + 3

x + 3y + 2z = 2 becomes x + 3(-z + 3) + 2z = 2 -->

x - 3z + 9 + 2z = 2 -->
x - z + 9 = 2 -->
x = z - 7.

x and y now in terms of z. z is *free* variable. Solution is now

x = z - 7
y = - z + 3
z = anything it wants. Make the free variable your parameter:

x = t - 7
y = - t + 3
z = t

And you have the parametric equations for the line that the two planes share in common.

Reductio Ad Absurdum "RAA"

The assumption underlying ALL this work is that there IS a solution.

That assumption led to the conclusion that $0 = 1$! ABSURD

Therefore the assumption was false.

There IS No Solution

Feb 22-9:43 AM