1, Name:

Let

$$A = \begin{pmatrix} a_{11} & -12+13i & 6i \\ -9i & -5 & -14 \\ -15 & 8i & -13 \end{pmatrix}, B = \begin{pmatrix} 15i & 9 & 3+7i \\ b_{21} & -i & -11 \\ 5+4i & 1 & 10 \end{pmatrix}, D = \begin{pmatrix} 24i & d_{12} & d_{13} \\ 46 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -1 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -7 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 14 & 9 \\ 1 & 3 \end{pmatrix}, G = \begin{pmatrix} 4a & 3 \\ -10 & -2a+5b \end{pmatrix},$$
$$H = \begin{pmatrix} -4a+3b & 1 \\ 3 & -3a+2b \end{pmatrix},$$

and $k = 2i$, $p = -2$, $tr(G) = -37$, $tr(H) = -28$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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2, Name:

Let

$$A = \begin{pmatrix} a_{11} & -10-13i & 4i \\ -4i & -7 & -15 \\ -5 & -9i & 3 \end{pmatrix}, B = \begin{pmatrix} -3i & -1 & -8+15i \\ b_{21} & 11i & -2 \\ 9+8i & -12 & 12 \end{pmatrix}, D = \begin{pmatrix} -13i & d_{12} & d_{13} \\ 2 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 2 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -8 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 6 & 14 \\ -1 & 8 \end{pmatrix}, G = \begin{pmatrix} 2a & 3 \\ -10 & -4a+5b \end{pmatrix},$$
$$H = \begin{pmatrix} -2a+3b & 1 \\ 3 & 4a-3b \end{pmatrix},$$

and $k = 2i$, $p = 3$, $tr(G) = -21$, $tr(H) = -4$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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3, Name:

Let

$$A = \begin{pmatrix} a_{11} & 10+6i & -15i \\ -5i & 7 & -14 \\ 3 & 5i & 13 \end{pmatrix}, B = \begin{pmatrix} -7i & 15 & 4-10i \\ b_{21} & -9i & -1 \\ -4-8i & -13 & -2 \end{pmatrix}, D = \begin{pmatrix} 29i & d_{12} & d_{13} \\ -45 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -2 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 6 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 1 & 19 \\ 15 & 10 \end{pmatrix}, G = \begin{pmatrix} 4a & 3 \\ -10 & 3a+5b \end{pmatrix},$$
$$H = \begin{pmatrix} 2a-3b & 1 \\ 3 & -4a-2b \end{pmatrix},$$

and $k = 2i$, $p = 5$, $tr(G) = -53$, $tr(H) = 33$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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4, Name:

Let

$$A = \begin{pmatrix} a_{11} & -15+13i & -5i \\ -12i & 14 & 12 \\ -7 & -14i & 8 \end{pmatrix}, B = \begin{pmatrix} -4i & 5 & 1-13i \\ b_{21} & -2i & 2 \\ 10+9i & 4 & 11 \end{pmatrix}, D = \begin{pmatrix} 51i & d_{12} & d_{13} \\ 84 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 3 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 8 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 3 & -16 \\ 3 & -10 \end{pmatrix}, G = \begin{pmatrix} 4a & 3 \\ -10 & 2a+5b \end{pmatrix},$$
$$H = \begin{pmatrix} 3a-2b & 1 \\ 3 & -3a-4b \end{pmatrix},$$

and $k = 5i$, $p = 4$, $tr(G) = 52$, $tr(H) = -12$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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5, Name:

Let

$$A = \begin{pmatrix} a_{11} & 3+5i & i \\ -14i & -3 & 4 \\ 12 & -10i & -2 \end{pmatrix}, B = \begin{pmatrix} 8i & -6 & -15-i \\ b_{21} & 13i & 15 \\ 14-8i & -9 & 6 \end{pmatrix}, D = \begin{pmatrix} -92i & d_{12} & d_{13} \\ 116 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 2 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 4 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -9 & -20 \\ -4 & -15 \end{pmatrix}, G = \begin{pmatrix} -4a & 3 \\ -10 & 4a+5b \end{pmatrix},$$
$$H = \begin{pmatrix} 2a-3b & 1 \\ 3 & -2a+3b \end{pmatrix},$$

and $k = 4i$, $p = 5$, $tr(G) = -30$, $tr(H) = 0$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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6, Name:

Let

$$A = \begin{pmatrix} a_{11} & 12+9i & 5i \\ -8i & 3 & -15 \\ 2 & -5i & -2 \end{pmatrix}, B = \begin{pmatrix} -6i & -13 & 4-12i \\ b_{21} & 6i & 10 \\ 13+15i & 1 & 7 \end{pmatrix}, D = \begin{pmatrix} 26i & d_{12} & d_{13} \\ -60 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -9 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -2 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -2 & -7 \\ 3 & -8 \end{pmatrix}, G = \begin{pmatrix} -2a & 3 \\ -10 & -3a+2b \end{pmatrix},$$
$$H = \begin{pmatrix} -4a+4b & 1 \\ 3 & 5a+3b \end{pmatrix},$$

and $k = -2i$, $p = 4$, $tr(G) = -32$, $tr(H) = -1$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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7, Name:

Let

$$A=\begin{pmatrix} a_{11} & 4+13i & i \\ -2i & -7 & 11 \\ -13 & 2i & -4 \end{pmatrix}, B=\begin{pmatrix} -5i & 14 & -8-10i \\ b_{21} & -14i & -15 \\ 10+9i & -1 & 7 \end{pmatrix}, D=\begin{pmatrix} 57i & d_{12} & d_{13} \\ 68 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C=\begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -5 \end{pmatrix}, E=\begin{pmatrix} k_2 & k_3 \\ 7 & k_3+k_4 \end{pmatrix}, F=\begin{pmatrix} -1 & 2 \\ 5 & -11 \end{pmatrix}, G=\begin{pmatrix} 4a & 3 \\ -10 & 2a+3b \end{pmatrix},$$
$$H=\begin{pmatrix} 5a-2b & 1 \\ 3 & -3a-4b \end{pmatrix},$$

and $k=4i$, $p=5$, $tr(G)=-18$, $tr(H)=-34$, and $D=kA-pB$, and $C+E=F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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8, Name:

Let

$$A=\begin{pmatrix} a_{11} & 13-4i & -13i \\ 8i & 15 & 14 \\ -14 & -11i & -10 \end{pmatrix}, B=\begin{pmatrix} 9i & -1 & -2-9i \\ b_{21} & 2i & 4 \\ -6-8i & -5 & 5 \end{pmatrix}, D=\begin{pmatrix} -89i & d_{12} & d_{13} \\ 47 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C=\begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -6 \end{pmatrix}, E=\begin{pmatrix} k_2 & k_3 \\ 4 & k_3+k_4 \end{pmatrix}, F=\begin{pmatrix} -11 & -5 \\ 3 & -4 \end{pmatrix}, G=\begin{pmatrix} 5a & 3 \\ -10 & -2a-3b \end{pmatrix},$$
$$H=\begin{pmatrix} 4a-4b & 1 \\ 3 & 3a+2b \end{pmatrix},$$

and $k=-4i$, $p=5$, $tr(G)=-3$, $tr(H)=23$, and $D=kA-pB$, and $C+E=F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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9, Name:

Let

$$A=\begin{pmatrix} a_{11} & 3+10i & 11i \\ 6i & 8 & -1 \\ -7 & -3i & 4 \end{pmatrix}, B=\begin{pmatrix} -8i & -15 & -4+15i \\ b_{21} & 12i & -9 \\ 5+2i & -5 & -10 \end{pmatrix}, D=\begin{pmatrix} 28i & d_{12} & d_{13} \\ 12 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C=\begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -2 \end{pmatrix}, E=\begin{pmatrix} k_2 & k_3 \\ 5 & k_3+k_4 \end{pmatrix}, F=\begin{pmatrix} 12 & -4 \\ -4 & -9 \end{pmatrix}, G=\begin{pmatrix} -3a & 3 \\ -10 & 5a+3b \end{pmatrix},$$
$$H=\begin{pmatrix} 2a-4b & 1 \\ 3 & 4a-2b \end{pmatrix},$$

and $k=-4i$, $p=-2$, $tr(G)=-2$, $tr(H)=54$, and $D=kA-pB$, and $C+E=F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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10, Name:

Let

$$A = \begin{pmatrix} a_{11} & 1-8i & 9i \\ -12i & 12 & 6 \\ 14 & 15i & 5 \end{pmatrix}, B = \begin{pmatrix} -2i & 10 & 2+11i \\ b_{21} & -5i & -4 \\ -11-13i & -14 & -3 \end{pmatrix}, D = \begin{pmatrix} -10i & d_{12} & d_{13} \\ 40 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -6 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -2 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -1 & 19 \\ 4 & 9 \end{pmatrix}, G = \begin{pmatrix} 5a & 3 \\ -10 & 3a+2b \end{pmatrix},$$
$$H = \begin{pmatrix} -4a+4b & 1 \\ 3 & -3a-2b \end{pmatrix},$$

and $k = 3i$, $p = 4$, $tr(G) = 18$, $tr(H) = 3$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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11, Name:

Let

$$A = \begin{pmatrix} a_{11} & -15-14i & 12i \\ 13i & -12 & 14 \\ -7 & 2i & -11 \end{pmatrix}, B = \begin{pmatrix} -13i & -3 & 8+11i \\ b_{21} & 6i & 3 \\ 15+10i & 7 & -10 \end{pmatrix}, D = \begin{pmatrix} -84i & d_{12} & d_{13} \\ -32 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 2 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -8 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -5 & -9 \\ -15 & -8 \end{pmatrix}, G = \begin{pmatrix} 3a & 3 \\ -10 & -2a-4b \end{pmatrix},$$
$$H = \begin{pmatrix} 4a+2b & 1 \\ 3 & -3a+5b \end{pmatrix},$$

and $k = 4i$, $p = -4$, $tr(G) = -26$, $tr(H) = 29$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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12, Name:

Let

$$A = \begin{pmatrix} a_{11} & -11-4i & 15i \\ -i & -6 & -2 \\ -8 & 13i & -5 \end{pmatrix}, B = \begin{pmatrix} -15i & 7 & 8-9i \\ b_{21} & -13i & 12 \\ 14+6i & 11 & -10 \end{pmatrix}, D = \begin{pmatrix} -96i & d_{12} & d_{13} \\ -25 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 5 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -5 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 1 & -2 \\ -6 & 11 \end{pmatrix}, G = \begin{pmatrix} -2a & 3 \\ -10 & -4a+5b \end{pmatrix},$$
$$H = \begin{pmatrix} -3a+2b & 1 \\ 3 & 4a+3b \end{pmatrix},$$

and $k = 3i$, $p = -4$, $tr(G) = 17$, $tr(H) = -32$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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13, Name:

Let

$$A = \begin{pmatrix} a_{11} & -9-15i & -10i \\ -3i & -1 & 14 \\ 5 & 2i & 7 \end{pmatrix}, B = \begin{pmatrix} 15i & -7 & -14-6i \\ b_{21} & i & -12 \\ -13+9i & 8 & -2 \end{pmatrix}, D = \begin{pmatrix} 96i & d_{12} & d_{13} \\ 53 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -2 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -9 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -5 & -18 \\ -17 & -16 \end{pmatrix}, G = \begin{pmatrix} 2a & 3 \\ -10 & -2a-4b \end{pmatrix},$$
$$H = \begin{pmatrix} -3a+5b & 1 \\ 3 & 3a+4b \end{pmatrix},$$

and $k = 3i$, $p = -4$, $tr(G) = -28$, $tr(H) = 63$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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14, Name:

Let

$$A = \begin{pmatrix} a_{11} & -15-3i & 14i \\ -8i & 15 & -6 \\ 11 & 10i & 12 \end{pmatrix}, B = \begin{pmatrix} 13i & -2 & 5+4i \\ b_{21} & 6i & -4 \\ -7+7i & -13 & 8 \end{pmatrix}, D = \begin{pmatrix} -37i & d_{12} & d_{13} \\ 80 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -1 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 5 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 1 & -7 \\ -4 & -6 \end{pmatrix}, G = \begin{pmatrix} 4a & 3 \\ -10 & -3a-4b \end{pmatrix},$$
$$H = \begin{pmatrix} -2a+5b & 1 \\ 3 & 2a+3b \end{pmatrix},$$

and $k = 5i$, $p = 4$, $tr(G) = 23$, $tr(H) = -32$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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15, Name:

Let

$$A = \begin{pmatrix} a_{11} & -7+8i & -4i \\ -5i & -9 & 1 \\ -8 & 11i & -1 \end{pmatrix}, B = \begin{pmatrix} 12i & -10 & 13-12i \\ b_{21} & -6i & -11 \\ 3+6i & 5 & 9 \end{pmatrix}, D = \begin{pmatrix} -28i & d_{12} & d_{13} \\ 40 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 9 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -6 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 3 & -10 \\ -14 & 2 \end{pmatrix}, G = \begin{pmatrix} 4a & 3 \\ -10 & -3a-2b \end{pmatrix},$$
$$H = \begin{pmatrix} 3a+5b & 1 \\ 3 & 2a-4b \end{pmatrix},$$

and $k = 4i$, $p = -2$, $tr(G) = 5$, $tr(H) = -41$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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16, Name:

Let

$$A = \begin{pmatrix} a_{11} & -6-8i & 12i \\ 4i & 10 & -7 \\ 5 & -13i & 13 \end{pmatrix}, B = \begin{pmatrix} -9i & -12 & 2+3i \\ b_{21} & 14i & -15 \\ 1-i & 8 & 9 \end{pmatrix}, D = \begin{pmatrix} 39i & d_{12} & d_{13} \\ 2 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -3 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -6 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 14 & 13 \\ -1 & 4 \end{pmatrix}, G = \begin{pmatrix} -4a & 3 \\ -10 & 5a+3b \end{pmatrix},$$
$$H = \begin{pmatrix} -3a+2b & 1 \\ 3 & -2a+4b \end{pmatrix},$$

and $k = 2i$, $p = 5$, $tr(G) = 8$, $tr(H) = 65$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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17, Name:

Let

$$A = \begin{pmatrix} a_{11} & -9-8i & 11i \\ i & -2 & 12 \\ -11 & 7i & -15 \end{pmatrix}, B = \begin{pmatrix} 5i & 13 & -13-4i \\ b_{21} & 4i & 15 \\ -5-12i & 8 & -10 \end{pmatrix}, D = \begin{pmatrix} 8i & d_{12} & d_{13} \\ -16 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -1 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 5 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -10 & -17 \\ 0 & -14 \end{pmatrix}, G = \begin{pmatrix} 2a & 3 \\ -10 & 4a-2b \end{pmatrix},$$
$$H = \begin{pmatrix} 5a-3b & 1 \\ 3 & 3a-4b \end{pmatrix},$$

and $k = 2i$, $p = -2$, $tr(G) = 32$, $tr(H) = 34$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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18, Name:

Let

$$A = \begin{pmatrix} a_{11} & -6+6i & 5i \\ 3i & -7 & 12 \\ -8 & 11i & -12 \end{pmatrix}, B = \begin{pmatrix} 9i & -10 & 1-13i \\ b_{21} & -4i & 13 \\ -1+2i & 15 & -11 \end{pmatrix}, D = \begin{pmatrix} -55i & d_{12} & d_{13} \\ 39 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 7 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -8 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -8 & 0 \\ -14 & 10 \end{pmatrix}, G = \begin{pmatrix} -4a & 3 \\ -10 & 5a-2b \end{pmatrix},$$
$$H = \begin{pmatrix} 3a+4b & 1 \\ 3 & 2a-3b \end{pmatrix},$$

and $k = 2i$, $p = 5$, $tr(G) = -11$, $tr(H) = -33$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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19, Name:

Let

$$A=\begin{pmatrix} a_{11} & -9-6i & -2i \\ 9i & 11 & 14 \\ -1 & 3i & 2 \end{pmatrix}, B=\begin{pmatrix} -11i & 8 & -13-8i \\ b_{21} & i & 10 \\ -3-4i & 7 & 6 \end{pmatrix}, D=\begin{pmatrix} -16i & d_{12} & d_{13} \\ 92 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C=\begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 7 \end{pmatrix}, E=\begin{pmatrix} k_2 & k_3 \\ 3 & k_3+k_4 \end{pmatrix}, F=\begin{pmatrix} -9 & -2 \\ 9 & 7 \end{pmatrix}, G=\begin{pmatrix} 3a & 3 \\ -10 & -3a+2b \end{pmatrix},$$
$$H=\begin{pmatrix} -4a+5b & 1 \\ 3 & 4a-2b \end{pmatrix},$$

and $k=-4i$, $p=4$, $tr(G)=4$, $tr(H)=6$, and $D=kA-pB$, and $C+E=F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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20, Name:

Let

$$A=\begin{pmatrix} a_{11} & -10-7i & -6i \\ 5i & 1 & -13 \\ 3 & 8i & -8 \end{pmatrix}, B=\begin{pmatrix} 2i & -2 & -12-9i \\ b_{21} & 6i & 9 \\ 14-3i & 12 & 10 \end{pmatrix}, D=\begin{pmatrix} -66i & d_{12} & d_{13} \\ 23 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C=\begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 4 \end{pmatrix}, E=\begin{pmatrix} k_2 & k_3 \\ -2 & k_3+k_4 \end{pmatrix}, F=\begin{pmatrix} -2 & -21 \\ -9 & -8 \end{pmatrix}, G=\begin{pmatrix} 2a & 3 \\ -10 & -3a-4b \end{pmatrix},$$
$$H=\begin{pmatrix} 5a+4b & 1 \\ 3 & 3a-2b \end{pmatrix},$$

and $k=-4i$, $p=3$, $tr(G)=-27$, $tr(H)=66$, and $D=kA-pB$, and $C+E=F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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21, Name:

Let

$$A=\begin{pmatrix} a_{11} & 11+4i & -9i \\ -4i & -5 & 5 \\ -2 & -6i & 6 \end{pmatrix}, B=\begin{pmatrix} 13i & -12 & -7+12i \\ b_{21} & -3i & -10 \\ -11+14i & 10 & 2 \end{pmatrix}, D=\begin{pmatrix} -35i & d_{12} & d_{13} \\ -23 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C=\begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 9 \end{pmatrix}, E=\begin{pmatrix} k_2 & k_3 \\ 3 & k_3+k_4 \end{pmatrix}, F=\begin{pmatrix} 11 & 3 \\ -2 & 5 \end{pmatrix}, G=\begin{pmatrix} -2a & 3 \\ -10 & 3a+2b \end{pmatrix},$$
$$H=\begin{pmatrix} 4a-4b & 1 \\ 3 & 5a-3b \end{pmatrix},$$

and $k=-2i$, $p=5$, $tr(G)=-7$, $tr(H)=-13$, and $D=kA-pB$, and $C+E=F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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22, Name:

Let

$$A = \begin{pmatrix} a_{11} & -9+7i & -5i \\ -4i & -14 & -2 \\ -7 & 2i & 1 \end{pmatrix}, B = \begin{pmatrix} -13i & 14 & -11-15i \\ b_{21} & 5i & -6 \\ 10+3i & 12 & -3 \end{pmatrix}, D = \begin{pmatrix} -17i & d_{12} & d_{13} \\ 5 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 6 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -2 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 15 & 20 \\ 7 & 19 \end{pmatrix}, G = \begin{pmatrix} 5a & 3 \\ -10 & -3a+2b \end{pmatrix},$$
$$H = \begin{pmatrix} -2a+4b & 1 \\ 3 & -4a+3b \end{pmatrix},$$

and $k = 2i$, $p = -3$, $tr(G) = -8$, $tr(H) = 11$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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23, Name:

Let

$$A = \begin{pmatrix} a_{11} & 5+10i & 13i \\ 11i & -2 & -1 \\ -11 & -7i & 12 \end{pmatrix}, B = \begin{pmatrix} -10i & -5 & 1+8i \\ b_{21} & 2i & 4 \\ 15-8i & -13 & 9 \end{pmatrix}, D = \begin{pmatrix} -68i & d_{12} & d_{13} \\ 6 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 4 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 7 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -14 & -12 \\ 4 & 0 \end{pmatrix}, G = \begin{pmatrix} 3a & 3 \\ -10 & 4a+5b \end{pmatrix},$$
$$H = \begin{pmatrix} -2a-4b & 1 \\ 3 & 2a-3b \end{pmatrix},$$

and $k = 2i$, $p = -4$, $tr(G) = 56$, $tr(H) = -49$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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24, Name:

Let

$$A = \begin{pmatrix} a_{11} & 7+9i & 5i \\ 13i & -15 & -14 \\ 10 & -6i & 11 \end{pmatrix}, B = \begin{pmatrix} -11i & 8 & -13-5i \\ b_{21} & -10i & 3 \\ -3+2i & 4 & -8 \end{pmatrix}, D = \begin{pmatrix} -19i & d_{12} & d_{13} \\ 31 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 7 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -6 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 3 & 5 \\ 0 & 17 \end{pmatrix}, G = \begin{pmatrix} 3a & 3 \\ -10 & -2a-4b \end{pmatrix},$$
$$H = \begin{pmatrix} 2a+4b & 1 \\ 3 & 5a-3b \end{pmatrix},$$

and $k = -3i$, $p = -2$, $tr(G) = 29$, $tr(H) = 29$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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25, Name:

Let

$$A = \begin{pmatrix} a_{11} & -1+2i & -10i \\ 7i & -13 & -8 \\ -14 & -5i & 5 \end{pmatrix}, B = \begin{pmatrix} 14i & 3 & 1-15i \\ b_{21} & 4i & 8 \\ -4+11i & -2 & -3 \end{pmatrix}, D = \begin{pmatrix} 68i & d_{12} & d_{13} \\ -35 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 5 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -4 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -4 & 8 \\ 4 & 20 \end{pmatrix}, G = \begin{pmatrix} 2a & 3 \\ -10 & 4a+3b \end{pmatrix},$$
$$H = \begin{pmatrix} 5a-2b & 1 \\ 3 & -4a-3b \end{pmatrix},$$

and $k = 2i$, $p = -3$, $tr(G) = -45$, $tr(H) = 31$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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26, Name:

Let

$$A = \begin{pmatrix} a_{11} & 12-2i & 9i \\ -10i & -11 & -9 \\ 8 & -6i & 11 \end{pmatrix}, B = \begin{pmatrix} 14i & -5 & 10-7i \\ b_{21} & -15i & 4 \\ 15+6i & -13 & -1 \end{pmatrix}, D = \begin{pmatrix} 28i & d_{12} & d_{13} \\ -56 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 3 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 5 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 5 & 10 \\ -2 & 5 \end{pmatrix}, G = \begin{pmatrix} 5a & 3 \\ -10 & 2a-3b \end{pmatrix},$$
$$H = \begin{pmatrix} -4a-2b & 1 \\ 3 & 4a+3b \end{pmatrix},$$

and $k = -2i$, $p = -3$, $tr(G) = 0$, $tr(H) = -7$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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27, Name:

Let

$$A = \begin{pmatrix} a_{11} & 5-11i & -9i \\ -10i & 7 & 8 \\ -4 & 2i & -12 \end{pmatrix}, B = \begin{pmatrix} 13i & -5 & 14-7i \\ b_{21} & -i & 11 \\ -14-8i & 9 & -6 \end{pmatrix}, D = \begin{pmatrix} 97i & d_{12} & d_{13} \\ 18 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 2 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 1 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 1 & -21 \\ -6 & -14 \end{pmatrix}, G = \begin{pmatrix} -4a & 3 \\ -10 & 2a+5b \end{pmatrix},$$
$$H = \begin{pmatrix} 4a-3b & 1 \\ 3 & 3a-2b \end{pmatrix},$$

and $k = 3i$, $p = -4$, $tr(G) = -6$, $tr(H) = -29$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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28, Name:

Let

$$A = \begin{pmatrix} a_{11} & 2-11i & -14i \\ 14i & -5 & -7 \\ -1 & 7i & 6 \end{pmatrix}, B = \begin{pmatrix} -15i & -9 & -13+5i \\ b_{21} & -6i & 9 \\ 4-4i & 15 & -8 \end{pmatrix}, D = \begin{pmatrix} 47i & d_{12} & d_{13} \\ -58 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 8 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -9 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -2 & -14 \\ -17 & -1 \end{pmatrix}, G = \begin{pmatrix} -2a & 3 \\ -10 & 3a+2b \end{pmatrix},$$
$$H = \begin{pmatrix} 5a-4b & 1 \\ 3 & -3a+4b \end{pmatrix},$$

and $k = 2i$, $p = 3$, $tr(G) = 9$, $tr(H) = 10$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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29, Name:

Let

$$A = \begin{pmatrix} a_{11} & -11-5i & -13i \\ 9i & -6 & 7 \\ -1 & 15i & 1 \end{pmatrix}, B = \begin{pmatrix} -7i & 2 & 11+12i \\ b_{21} & 13i & 5 \\ 8-10i & -14 & -15 \end{pmatrix}, D = \begin{pmatrix} 37i & d_{12} & d_{13} \\ -6 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 6 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 4 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 0 & 1 \\ -5 & 6 \end{pmatrix}, G = \begin{pmatrix} -2a & 3 \\ -10 & 3a-3b \end{pmatrix},$$
$$H = \begin{pmatrix} 4a+5b & 1 \\ 3 & 2a-4b \end{pmatrix},$$

and $k = -4i$, $p = 3$, $tr(G) = -12$, $tr(H) = -34$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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30, Name:

Let

$$A = \begin{pmatrix} a_{11} & 13+6i & -7i \\ -i & 7 & 5 \\ 14 & -9i & -13 \end{pmatrix}, B = \begin{pmatrix} 2i & -4 & 3+8i \\ b_{21} & -14i & 11 \\ -11-10i & 4 & 10 \end{pmatrix}, D = \begin{pmatrix} 14i & d_{12} & d_{13} \\ 33 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -6 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 4 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 3 & 1 \\ -4 & -11 \end{pmatrix}, G = \begin{pmatrix} 2a & 3 \\ -10 & 3a+4b \end{pmatrix},$$
$$H = \begin{pmatrix} -3a+5b & 1 \\ 3 & -4a-2b \end{pmatrix},$$

and $k = -3i$, $p = -4$, $tr(G) = 1$, $tr(H) = -10$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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31, Name:

Let

$$A = \begin{pmatrix} a_{11} & 1-13i & 4i \\ 9i & 2 & -9 \\ 7 & 11i & 10 \end{pmatrix}, B = \begin{pmatrix} -15i & -7 & -10-i \\ b_{21} & 12i & -5 \\ -12-2i & -4 & 8 \end{pmatrix}, D = \begin{pmatrix} 10i & d_{12} & d_{13} \\ -101 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 3 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -5 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -2 & 4 \\ -4 & 1 \end{pmatrix}, G = \begin{pmatrix} 3a & 3 \\ -10 & 5a-3b \end{pmatrix},$$
$$H = \begin{pmatrix} 4a-2b & 1 \\ 3 & 2a-4b \end{pmatrix},$$

and $k = 5i$, $p = -4$, $tr(G) = 47$, $tr(H) = 54$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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32, Name:

Let

$$A = \begin{pmatrix} a_{11} & 2-13i & -12i \\ 13i & 1 & -1 \\ -6 & 9i & 5 \end{pmatrix}, B = \begin{pmatrix} 11i & -11 & -14+10i \\ b_{21} & 6i & -2 \\ -8+4i & 7 & -15 \end{pmatrix}, D = \begin{pmatrix} -4i & d_{12} & d_{13} \\ 72 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 7 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -8 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -3 & -13 \\ -6 & 3 \end{pmatrix}, G = \begin{pmatrix} -3a & 3 \\ -10 & 5a+4b \end{pmatrix},$$
$$H = \begin{pmatrix} -4a+2b & 1 \\ 3 & 3a-2b \end{pmatrix},$$

and $k = -4i$, $p = 4$, $tr(G) = 26$, $tr(H) = -1$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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33, Name:

Let

$$A = \begin{pmatrix} a_{11} & -1+12i & -3i \\ 14i & -12 & 3 \\ -15 & -5i & 11 \end{pmatrix}, B = \begin{pmatrix} -6i & 4 & 7+13i \\ b_{21} & -8i & 2 \\ -9+i & 6 & -7 \end{pmatrix}, D = \begin{pmatrix} 37i & d_{12} & d_{13} \\ -86 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -5 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 7 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -9 & -11 \\ 4 & -14 \end{pmatrix}, G = \begin{pmatrix} 3a & 3 \\ -10 & -2a-4b \end{pmatrix},$$
$$H = \begin{pmatrix} 5a+2b & 1 \\ 3 & -3a+4b \end{pmatrix},$$

and $k = 5i$, $p = 2$, $tr(G) = -10$, $tr(H) = 36$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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34, Name:

Let

$$A = \begin{pmatrix} a_{11} & -1-2i & 2i \\ -14i & -11 & 10 \\ 15 & 3i & 13 \end{pmatrix}, B = \begin{pmatrix} -8i & 7 & 4-3i \\ b_{21} & -7i & -10 \\ 14+5i & 11 & -5 \end{pmatrix}, D = \begin{pmatrix} 32i & d_{12} & d_{13} \\ -64 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 5 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 7 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 12 & 0 \\ 5 & 2 \end{pmatrix}, G = \begin{pmatrix} -4a & 3 \\ -10 & 2a+3b \end{pmatrix},$$
$$H = \begin{pmatrix} 4a-3b & 1 \\ 3 & 5a-2b \end{pmatrix},$$

and $k = -4i$, $p = -2$, $tr(G) = 7$, $tr(H) = -6$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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35, Name:

Let

$$A = \begin{pmatrix} a_{11} & -9+8i & -11i \\ -14i & 15 & -12 \\ -7 & 7i & -2 \end{pmatrix}, B = \begin{pmatrix} -13i & -8 & 9+12i \\ b_{21} & -6i & -4 \\ -3+14i & 5 & -1 \end{pmatrix}, D = \begin{pmatrix} 49i & d_{12} & d_{13} \\ 40 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 1 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 5 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 1 & -3 \\ 3 & 6 \end{pmatrix}, G = \begin{pmatrix} -4a & 3 \\ -10 & 2a+3b \end{pmatrix},$$
$$H = \begin{pmatrix} -3a+5b & 1 \\ 3 & 4a-2b \end{pmatrix},$$

and $k = 5i$, $p = 3$, $tr(G) = -7$, $tr(H) = 8$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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36, Name:

Let

$$A = \begin{pmatrix} a_{11} & -7-4i & i \\ -9i & -10 & -12 \\ -8 & 13i & 15 \end{pmatrix}, B = \begin{pmatrix} -5i & 14 & 7+12i \\ b_{21} & 8i & 6 \\ -2-3i & -6 & 3 \end{pmatrix}, D = \begin{pmatrix} -17i & d_{12} & d_{13} \\ -49 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 2 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -6 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 4 & -15 \\ -15 & -8 \end{pmatrix}, G = \begin{pmatrix} -3a & 3 \\ -10 & -2a+4b \end{pmatrix},$$
$$H = \begin{pmatrix} -4a+3b & 1 \\ 3 & 5a+2b \end{pmatrix},$$

and $k = -3i$, $p = 2$, $tr(G) = -11$, $tr(H) = 37$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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37, Name:

Let

$$A = \begin{pmatrix} a_{11} & -7-12i & -4i \\ -10i & -3 & 13 \\ -2 & 7i & 15 \end{pmatrix}, B = \begin{pmatrix} 14i & -13 & -5-15i \\ b_{21} & -11i & 4 \\ -1+9i & 11 & 2 \end{pmatrix}, D = \begin{pmatrix} 66i & d_{12} & d_{13} \\ 50 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -1 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 9 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -8 & -20 \\ 4 & -15 \end{pmatrix}, G = \begin{pmatrix} -2a & 3 \\ -10 & 5a+3b \end{pmatrix},$$
$$H = \begin{pmatrix} 2a+4b & 1 \\ 3 & -3a-4b \end{pmatrix},$$

and $k = 2i$, $p = -3$, $tr(G) = -9$, $tr(H) = -4$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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38, Name:

Let

$$A = \begin{pmatrix} a_{11} & 6+5i & 8i \\ -13i & 13 & -4 \\ -1 & -9i & 11 \end{pmatrix}, B = \begin{pmatrix} 4i & 15 & 12-15i \\ b_{21} & -7i & 10 \\ -14-11i & 14 & 1 \end{pmatrix}, D = \begin{pmatrix} 20i & d_{12} & d_{13} \\ -58 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -6 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 6 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 11 & 7 \\ 5 & -6 \end{pmatrix}, G = \begin{pmatrix} 2a & 3 \\ -10 & -4a-2b \end{pmatrix},$$
$$H = \begin{pmatrix} 4a-3b & 1 \\ 3 & 5a+3b \end{pmatrix},$$

and $k = -4i$, $p = 3$, $tr(G) = 20$, $tr(H) = -54$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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39, Name:

Let

$$A = \begin{pmatrix} a_{11} & 13-13i & -15i \\ 6i & 14 & 12 \\ -9 & 8i & 11 \end{pmatrix}, B = \begin{pmatrix} 9i & -11 & -10-2i \\ b_{21} & 2i & 15 \\ 4+10i & -5 & -8 \end{pmatrix}, D = \begin{pmatrix} -21i & d_{12} & d_{13} \\ 9 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -2 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -1 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -4 & -1 \\ -8 & -7 \end{pmatrix}, G = \begin{pmatrix} -2a & 3 \\ -10 & 4a-3b \end{pmatrix},$$
$$H = \begin{pmatrix} -4a+2b & 1 \\ 3 & 3a+5b \end{pmatrix},$$

and $k = 2i$, $p = 3$, $tr(G) = -13$, $tr(H) = 23$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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40, Name:

Let

$$A = \begin{pmatrix} a_{11} & 11-9i & 3i \\ -12i & 13 & 8 \\ -2 & i & 14 \end{pmatrix}, B = \begin{pmatrix} 12i & -6 & -8-7i \\ b_{21} & -14i & 15 \\ -1+7i & 10 & -10 \end{pmatrix}, D = \begin{pmatrix} -70i & d_{12} & d_{13} \\ 14 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 7 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 6 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 11 & -1 \\ -2 & 3 \end{pmatrix}, G = \begin{pmatrix} -4a & 3 \\ -10 & 4a-2b \end{pmatrix},$$
$$H = \begin{pmatrix} 3a-3b & 1 \\ 3 & 2a+5b \end{pmatrix},$$

and $k = 2i$, $p = 5$, $tr(G) = 8$, $tr(H) = -13$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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41, Name:

Let

$$A = \begin{pmatrix} a_{11} & 1-2i & 9i \\ -i & 3 & -10 \\ 14 & -15i & -3 \end{pmatrix}, B = \begin{pmatrix} -7i & -11 & 6+5i \\ b_{21} & -14i & 7 \\ 12-12i & 10 & 11 \end{pmatrix}, D = \begin{pmatrix} 87i & d_{12} & d_{13} \\ 29 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 7 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 4 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 0 & 2 \\ 3 & 4 \end{pmatrix}, G = \begin{pmatrix} -2a & 3 \\ -10 & 5a+3b \end{pmatrix},$$
$$H = \begin{pmatrix} -4a-3b & 1 \\ 3 & 2a+4b \end{pmatrix},$$

and $k = 4i$, $p = 5$, $tr(G) = -21$, $tr(H) = -4$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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42, Name:

Let

$$A = \begin{pmatrix} a_{11} & 13+i & -11i \\ -7i & 4 & 10 \\ -8 & 8i & 2 \end{pmatrix}, B = \begin{pmatrix} -4i & -14 & -15+11i \\ b_{21} & 14i & -3 \\ -1-5i & -9 & -2 \end{pmatrix}, D = \begin{pmatrix} -6i & d_{12} & d_{13} \\ 38 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 6 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -7 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -7 & -12 \\ -6 & 3 \end{pmatrix}, G = \begin{pmatrix} 5a & 3 \\ -10 & 2a-3b \end{pmatrix},$$
$$H = \begin{pmatrix} -4a-2b & 1 \\ 3 & 4a+3b \end{pmatrix},$$

and $k = 2i$, $p = -4$, $tr(G) = 19$, $tr(H) = 3$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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43, Name:

Let

$$A = \begin{pmatrix} a_{11} & 14-i & -5i \\ 9i & -4 & -6 \\ -3 & -13i & 11 \end{pmatrix}, B = \begin{pmatrix} -9i & 6 & -11+3i \\ b_{21} & -2i & -12 \\ 1+10i & 2 & -8 \end{pmatrix}, D = \begin{pmatrix} 51i & d_{12} & d_{13} \\ -87 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -6 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 6 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 2 & -4 \\ 1 & -14 \end{pmatrix}, G = \begin{pmatrix} -3a & 3 \\ -10 & -2a+5b \end{pmatrix},$$
$$H = \begin{pmatrix} 3a-4b & 1 \\ 3 & 4a+2b \end{pmatrix},$$

and $k = 3i$, $p = 4$, $tr(G) = 25$, $tr(H) = -30$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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44, Name:

Let

$$A = \begin{pmatrix} a_{11} & 8-4i & -9i \\ 9i & -14 & -1 \\ 7 & -11i & -15 \end{pmatrix}, B = \begin{pmatrix} 6i & -10 & 1-3i \\ b_{21} & -6i & 3 \\ -2-5i & 14 & -13 \end{pmatrix}, D = \begin{pmatrix} -6i & d_{12} & d_{13} \\ -23 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -9 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -4 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -4 & 0 \\ 4 & -4 \end{pmatrix}, G = \begin{pmatrix} 4a & 3 \\ -10 & -3a-4b \end{pmatrix},$$
$$H = \begin{pmatrix} 3a+5b & 1 \\ 3 & -2a+2b \end{pmatrix},$$

and $k = -3i$, $p = 5$, $tr(G) = -17$, $tr(H) = 27$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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45, Name:

Let

$$A = \begin{pmatrix} a_{11} & -13+8i & 11i \\ -2i & 5 & -11 \\ 10 & 9i & 3 \end{pmatrix}, B = \begin{pmatrix} 4i & -3 & -4-i \\ b_{21} & -9i & -5 \\ -10+13i & -14 & 15 \end{pmatrix}, D = \begin{pmatrix} -26i & d_{12} & d_{13} \\ 4 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 1 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -9 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 4 & -3 \\ -12 & 0 \end{pmatrix}, G = \begin{pmatrix} 5a & 3 \\ -10 & 3a-3b \end{pmatrix},$$
$$H = \begin{pmatrix} 4a-4b & 1 \\ 3 & 2a-2b \end{pmatrix},$$

and $k = 3i$, $p = 2$, $tr(G) = 35$, $tr(H) = 30$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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46, Name:

Let

$$A=\begin{pmatrix} a_{11} & 1+6i & -15i \\ -i & -9 & 11 \\ 4 & -12i & 8 \end{pmatrix}, B=\begin{pmatrix} -3i & 7 & 15+9i \\ b_{21} & -11i & 3 \\ 10-14i & 14 & -13 \end{pmatrix}, D=\begin{pmatrix} -21i & d_{12} & d_{13} \\ 41 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C=\begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 1 \end{pmatrix}, E=\begin{pmatrix} k_2 & k_3 \\ -1 & k_3+k_4 \end{pmatrix}, F=\begin{pmatrix} -5 & -4 \\ -5 & -1 \end{pmatrix}, G=\begin{pmatrix} -2a & 3 \\ -10 & -4a+4b \end{pmatrix},$$
$$H=\begin{pmatrix} 3a+2b & 1 \\ 3 & 5a-3b \end{pmatrix},$$

and $k=2i$, $p=-3$, $tr(G)=-30$, $tr(H)=27$, and $D=kA-pB$, and $C+E=F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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47, Name:

Let

$$A=\begin{pmatrix} a_{11} & 8-13i & -7i \\ 14i & 12 & -8 \\ 13 & -11i & -3 \end{pmatrix}, B=\begin{pmatrix} 7i & 1 & 9-5i \\ b_{21} & -6i & -2 \\ -9+6i & -12 & 10 \end{pmatrix}, D=\begin{pmatrix} -44i & d_{12} & d_{13} \\ 22 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C=\begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 9 \end{pmatrix}, E=\begin{pmatrix} k_2 & k_3 \\ 7 & k_3+k_4 \end{pmatrix}, F=\begin{pmatrix} 0 & 2 \\ 4 & 9 \end{pmatrix}, G=\begin{pmatrix} 5a & 3 \\ -10 & 2a-2b \end{pmatrix},$$
$$H=\begin{pmatrix} -4a+4b & 1 \\ 3 & 3a-3b \end{pmatrix},$$

and $k=-2i$, $p=2$, $tr(G)=47$, $tr(H)=-6$, and $D=kA-pB$, and $C+E=F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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48, Name:

Let

$$A=\begin{pmatrix} a_{11} & -2-5i & -15i \\ 10i & 15 & -8 \\ -13 & -10i & 5 \end{pmatrix}, B=\begin{pmatrix} -6i & 2 & -7-3i \\ b_{21} & 13i & -11 \\ 4-4i & -14 & 9 \end{pmatrix}, D=\begin{pmatrix} 32i & d_{12} & d_{13} \\ 80 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C=\begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -6 \end{pmatrix}, E=\begin{pmatrix} k_2 & k_3 \\ 2 & k_3+k_4 \end{pmatrix}, F=\begin{pmatrix} -13 & -4 \\ -1 & -1 \end{pmatrix}, G=\begin{pmatrix} 2a & 3 \\ -10 & -2a-4b \end{pmatrix},$$
$$H=\begin{pmatrix} -3a+4b & 1 \\ 3 & 3a+5b \end{pmatrix},$$

and $k=-2i$, $p=5$, $tr(G)=-12$, $tr(H)=27$, and $D=kA-pB$, and $C+E=F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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49, Name:

Let

$$A = \begin{pmatrix} a_{11} & 13-7i & -4i \\ 6i & 10 & -12 \\ 5 & 14i & -14 \end{pmatrix}, B = \begin{pmatrix} -5i & 9 & -6+3i \\ b_{21} & 8i & -13 \\ -3+7i & -15 & -1 \end{pmatrix}, D = \begin{pmatrix} -5i & d_{12} & d_{13} \\ -8 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -7 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 8 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 1 & -4 \\ 13 & -8 \end{pmatrix}, G = \begin{pmatrix} 3a & 3 \\ -10 & 2a+4b \end{pmatrix},$$
$$H = \begin{pmatrix} 5a-4b & 1 \\ 3 & -2a-3b \end{pmatrix},$$

and $k = -2i$, $p = 5$, $tr(G) = 37$, $tr(H) = -6$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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50, Name:

Let

$$A = \begin{pmatrix} a_{11} & -10-i & 14i \\ -13i & 12 & -6 \\ 6 & 9i & 11 \end{pmatrix}, B = \begin{pmatrix} -5i & -4 & 2-8i \\ b_{21} & 3i & 15 \\ 5+13i & -2 & -14 \end{pmatrix}, D = \begin{pmatrix} 4i & d_{12} & d_{13} \\ -1 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 8 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -6 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 3 & 5 \\ -7 & 12 \end{pmatrix}, G = \begin{pmatrix} -3a & 3 \\ -10 & -2a+2b \end{pmatrix},$$
$$H = \begin{pmatrix} 3a+4b & 1 \\ 3 & -4a+5b \end{pmatrix},$$

and $k = 3i$, $p = 5$, $tr(G) = 34$, $tr(H) = 67$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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51, Name:

Let

$$A = \begin{pmatrix} a_{11} & 13-13i & 9i \\ 2i & -14 & 8 \\ 11 & -8i & -15 \end{pmatrix}, B = \begin{pmatrix} -4i & 14 & -7+10i \\ b_{21} & 15i & -12 \\ 6-3i & -6 & 5 \end{pmatrix}, D = \begin{pmatrix} -11i & d_{12} & d_{13} \\ -24 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 4 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -6 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -1 & -4 \\ -11 & 7 \end{pmatrix}, G = \begin{pmatrix} -4a & 3 \\ -10 & 2a+4b \end{pmatrix},$$
$$H = \begin{pmatrix} -3a+5b & 1 \\ 3 & 3a-2b \end{pmatrix},$$

and $k = 3i$, $p = -2$, $tr(G) = 30$, $tr(H) = 15$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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52, Name:

Let

$$A = \begin{pmatrix} a_{11} & -5+6i & i \\ -10i & -15 & -11 \\ -4 & -7i & -9 \end{pmatrix}, B = \begin{pmatrix} 15i & 8 & 14-3i \\ b_{21} & 13i & -1 \\ -14-13i & 2 & 5 \end{pmatrix}, D = \begin{pmatrix} -59i & d_{12} & d_{13} \\ 100 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -7 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 7 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 9 & -4 \\ 10 & -12 \end{pmatrix}, G = \begin{pmatrix} 5a & 3 \\ -10 & 4a-4b \end{pmatrix},$$
$$H = \begin{pmatrix} 3a-3b & 1 \\ 3 & 2a-2b \end{pmatrix},$$

and $k = 4i$, $p = 5$, $tr(G) = 28$, $tr(H) = 10$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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53, Name:

Let

$$A = \begin{pmatrix} a_{11} & 1+7i & 4i \\ 11i & -10 & 13 \\ -11 & -i & -7 \end{pmatrix}, B = \begin{pmatrix} -13i & -15 & -4-5i \\ b_{21} & 2i & -2 \\ 3+12i & 6 & 15 \end{pmatrix}, D = \begin{pmatrix} 23i & d_{12} & d_{13} \\ -4 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 6 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -6 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 0 & -8 \\ -7 & -4 \end{pmatrix}, G = \begin{pmatrix} -4a & 3 \\ -10 & 4a-3b \end{pmatrix},$$
$$H = \begin{pmatrix} -2a+5b & 1 \\ 3 & 2a+3b \end{pmatrix},$$

and $k = 2i$, $p = 3$, $tr(G) = -18$, $tr(H) = 48$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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54, Name:

Let

$$A = \begin{pmatrix} a_{11} & -12+6i & 2i \\ -15i & -7 & 8 \\ 10 & 15i & -3 \end{pmatrix}, B = \begin{pmatrix} -14i & 12 & 3-11i \\ b_{21} & 14i & 1 \\ 11+4i & -10 & -4 \end{pmatrix}, D = \begin{pmatrix} -68i & d_{12} & d_{13} \\ 26 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -6 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -8 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 8 & 2 \\ -15 & -9 \end{pmatrix}, G = \begin{pmatrix} 3a & 3 \\ -10 & 5a-3b \end{pmatrix},$$
$$H = \begin{pmatrix} 2a+4b & 1 \\ 3 & -4a-2b \end{pmatrix},$$

and $k = 2i$, $p = -4$, $tr(G) = 4$, $tr(H) = 4$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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55, Name:

Let

$$A = \begin{pmatrix} a_{11} & -12+13i & 9i \\ 15i & 2 & -13 \\ -3 & -10i & 11 \end{pmatrix}, B = \begin{pmatrix} -2i & -8 & -4-15i \\ b_{21} & -6i & -14 \\ -1-11i & 14 & -5 \end{pmatrix}, D = \begin{pmatrix} 8i & d_{12} & d_{13} \\ -36 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 7 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -7 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 14 & 8 \\ -8 & 9 \end{pmatrix}, G = \begin{pmatrix} 3a & 3 \\ -10 & 5a-3b \end{pmatrix},$$
$$H = \begin{pmatrix} 2a-2b & 1 \\ 3 & 4a-4b \end{pmatrix},$$

and $k = 4i$, $p = -4$, $tr(G) = 46$, $tr(H) = 42$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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56, Name:

Let

$$A = \begin{pmatrix} a_{11} & 15+5i & -5i \\ -3i & -13 & -6 \\ -7 & 2i & 6 \end{pmatrix}, B = \begin{pmatrix} 12i & -14 & -10+i \\ b_{21} & -9i & 11 \\ 9-i & 7 & -11 \end{pmatrix}, D = \begin{pmatrix} 74i & d_{12} & d_{13} \\ 7 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 4 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 9 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -3 & 0 \\ 16 & 9 \end{pmatrix}, G = \begin{pmatrix} 5a & 3 \\ -10 & 3a+2b \end{pmatrix},$$
$$H = \begin{pmatrix} -4a-3b & 1 \\ 3 & -2a+4b \end{pmatrix},$$

and $k = 5i$, $p = -2$, $tr(G) = -62$, $tr(H) = 29$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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57, Name:

Let

$$A = \begin{pmatrix} a_{11} & -6-3i & -14i \\ 14i & 6 & 8 \\ 10 & -15i & 15 \end{pmatrix}, B = \begin{pmatrix} 11i & -7 & -13-9i \\ b_{21} & 7i & -12 \\ -4-5i & -11 & 13 \end{pmatrix}, D = \begin{pmatrix} 48i & d_{12} & d_{13} \\ -15 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 4 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 2 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -9 & -1 \\ 7 & 5 \end{pmatrix}, G = \begin{pmatrix} 3a & 3 \\ -10 & -3a+2b \end{pmatrix},$$
$$H = \begin{pmatrix} -2a+5b & 1 \\ 3 & -4a+4b \end{pmatrix},$$

and $k = 3i$, $p = -3$, $tr(G) = 10$, $tr(H) = 33$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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58, Name:

Let

$$A = \begin{pmatrix} a_{11} & 7+9i & -5i \\ 13i & 10 & 6 \\ -8 & -4i & -13 \end{pmatrix}, B = \begin{pmatrix} -9i & -10 & -6-7i \\ b_{21} & -14i & -3 \\ -2+8i & -15 & -11 \end{pmatrix}, D = \begin{pmatrix} -55i & d_{12} & d_{13} \\ 35 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 1 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 3 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} -9 & -3 \\ 5 & 2 \end{pmatrix}, G = \begin{pmatrix} 2a & 3 \\ -10 & 3a-2b \end{pmatrix},$$
$$H = \begin{pmatrix} 4a-3b & 1 \\ 3 & -4a+5b \end{pmatrix},$$

and $k = -2i$, $p = -3$, $tr(G) = -20$, $tr(H) = 10$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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59, Name:

Let

$$A = \begin{pmatrix} a_{11} & 14+5i & -2i \\ 8i & 9 & 13 \\ -10 & -11i & 15 \end{pmatrix}, B = \begin{pmatrix} -14i & -12 & -5+i \\ b_{21} & 10i & 6 \\ -3+7i & 11 & 2 \end{pmatrix}, D = \begin{pmatrix} -48i & d_{12} & d_{13} \\ -68 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & 9 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ -4 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 7 & 0 \\ 0 & 7 \end{pmatrix}, G = \begin{pmatrix} 4a & 3 \\ -10 & 2a+3b \end{pmatrix},$$
$$H = \begin{pmatrix} -3a+5b & 1 \\ 3 & -4a-2b \end{pmatrix},$$

and $k = 2i$, $p = -4$, $tr(G) = 45$, $tr(H) = -33$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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60, Name:

Let

$$A = \begin{pmatrix} a_{11} & -4+9i & -3i \\ 8i & -10 & -12 \\ 2 & 3i & 12 \end{pmatrix}, B = \begin{pmatrix} -i & -9 & -11-8i \\ b_{21} & -13i & 14 \\ -5+6i & 4 & -15 \end{pmatrix}, D = \begin{pmatrix} 0 & d_{12} & d_{13} \\ 12 & d_{22} & d_{23} \\ d_{31} & d_{32} & d_{33} \end{pmatrix},$$
$$C = \begin{pmatrix} k_1 & k_2+k_4 \\ k_4 & -7 \end{pmatrix}, E = \begin{pmatrix} k_2 & k_3 \\ 5 & k_3+k_4 \end{pmatrix}, F = \begin{pmatrix} 4 & -10 \\ 0 & -14 \end{pmatrix}, G = \begin{pmatrix} 5a & 3 \\ -10 & 2a-2b \end{pmatrix},$$
$$H = \begin{pmatrix} 3a-4b & 1 \\ 3 & -3a+4b \end{pmatrix},$$

and $k = -4i$, $p = 4$, $tr(G) = -51$, $tr(H) = 0$, and $D = kA - pB$, and $C + E = F$
Find the values of a_{11}, b_{21}, d_{12}, d_{13}, d_{22}, d_{23}, d_{31}, d_{32}, d_{33}, k_1, k_2, k_3, k_4, a, b?

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