

3.2

$$\begin{vmatrix} 7 & -4 & -10 & 3 & 1 \\ 7 & -9 & 2 & -6 & -2 \\ -3 & -8 & 3 & -7 & -7 \\ 7 & 8 & -4 & 2 & -8 \\ 0 & 5 & -12 & 9 & 3 \end{vmatrix} = 7 \begin{vmatrix} -9 & 2 & -6 & -2 \\ -8 & 3 & -7 & -7 \\ 8 & -4 & 2 & -8 \\ 5 & -12 & 9 & 3 \end{vmatrix} + 4 \begin{vmatrix} 7 & 2 & -6 & -2 \\ -3 & 3 & -7 & -7 \\ 7 & -4 & 2 & -8 \\ 0 & -12 & 9 & 3 \end{vmatrix}$$

$$-10 \begin{vmatrix} 7 & -9 & -6 & -2 \\ -3 & -8 & -7 & -7 \\ 7 & 8 & 2 & -8 \\ 0 & 5 & 9 & 3 \end{vmatrix} - 3 \begin{vmatrix} 7 & -9 & 2 & -2 \\ -3 & -8 & 3 & -7 \\ 7 & 8 & -4 & -8 \\ 0 & 5 & -12 & 3 \end{vmatrix} + 1 \begin{vmatrix} 7 & -9 & 2 & -6 \\ -3 & -8 & 3 & -7 \\ 7 & 8 & -4 & 2 \\ 0 & 5 & -12 & 9 \end{vmatrix} =$$

$$= 7 \left(-9 \begin{vmatrix} 3 & -7 & -7 \\ -4 & 2 & -8 \\ -12 & 9 & 3 \end{vmatrix} - 2 \begin{vmatrix} -8 & -7 & -7 \\ 8 & 2 & -8 \\ 5 & 9 & 3 \end{vmatrix} - 6 \begin{vmatrix} -8 & 3 & -7 \\ 8 & -4 & -8 \\ 5 & -12 & 3 \end{vmatrix} + 2 \begin{vmatrix} -8 & 3 & -7 \\ 8 & -4 & 2 \\ 5 & -12 & 9 \end{vmatrix} \right)$$

$$+ 4 \left(7 \begin{vmatrix} 3 & -7 & -7 \\ -4 & 2 & -8 \\ -12 & 9 & 3 \end{vmatrix} - 2 \begin{vmatrix} -3 & -7 & -7 \\ 7 & 2 & -8 \\ 0 & 9 & 3 \end{vmatrix} - 6 \begin{vmatrix} -3 & 3 & -7 \\ 7 & -4 & -8 \\ 0 & -12 & 3 \end{vmatrix} + 2 \begin{vmatrix} -3 & 3 & -7 \\ 7 & -4 & 2 \\ 0 & -12 & 9 \end{vmatrix} \right) -$$

$$- 10 \left(7 \begin{vmatrix} -8 & -7 & -7 \\ 8 & 2 & -8 \\ 5 & 9 & 3 \end{vmatrix} + 9 \begin{vmatrix} -3 & -7 & -7 \\ 7 & 2 & -8 \\ 0 & 9 & 3 \end{vmatrix} - 6 \begin{vmatrix} -3 & -8 & -7 \\ 7 & 8 & -8 \\ 0 & 5 & 3 \end{vmatrix} + 2 \begin{vmatrix} -3 & -8 & -7 \\ 7 & 8 & 2 \\ 0 & 5 & 9 \end{vmatrix} \right) -$$

$$- 3 \left(7 \begin{vmatrix} -8 & 3 & -7 \\ 8 & -4 & -8 \\ 5 & -12 & 3 \end{vmatrix} + 9 \begin{vmatrix} -3 & 3 & -7 \\ 7 & -4 & -8 \\ 0 & -12 & 3 \end{vmatrix} + 2 \begin{vmatrix} -3 & -8 & -7 \\ 7 & 8 & -8 \\ 0 & 5 & 3 \end{vmatrix} + 2 \begin{vmatrix} -3 & -8 & 3 \\ 7 & 8 & -4 \\ 0 & 5 & -12 \end{vmatrix} \right) +$$

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$$+ \left(7 \begin{vmatrix} -8 & 3 & -7 \\ 8 & -4 & 2 \\ 5 & -12 & 9 \end{vmatrix} + 9 \begin{vmatrix} -3 & 3 & -7 \\ 7 & -4 & 2 \\ 0 & -12 & 9 \end{vmatrix} + 2 \begin{vmatrix} -3 & -8 & -7 \\ 7 & 8 & 2 \\ 0 & 5 & 9 \end{vmatrix} + 6 \begin{vmatrix} -3 & -8 & 3 \\ 7 & 8 & -4 \\ 0 & 5 & -12 \end{vmatrix} \right) =$$

$$= 7 \left(-9 \begin{vmatrix} 3 & 2 & -8 \\ 9 & 3 & -7 \\ -12 & 3 & -7 \end{vmatrix} + 7 \begin{vmatrix} -4 & -8 \\ -12 & 3 \end{vmatrix} - 7 \begin{vmatrix} -4 & 2 \\ -12 & 9 \end{vmatrix} \right) - 2 \left(-8 \begin{vmatrix} 2 & -8 \\ 9 & 3 \end{vmatrix} + 7 \begin{vmatrix} 8 & -8 \\ 5 & 3 \end{vmatrix} - \right.$$

$$\left. - 7 \begin{vmatrix} 8 & 2 \\ 5 & 9 \end{vmatrix} \right) - 6 \left(-8 \begin{vmatrix} -4 & -8 \\ -12 & 3 \end{vmatrix} - 3 \begin{vmatrix} 8 & -8 \\ 5 & 3 \end{vmatrix} - 7 \begin{vmatrix} 8 & -4 \\ 5 & -12 \end{vmatrix} \right) +$$

$$+ 2 \left(-8 \begin{vmatrix} -4 & 2 \\ -12 & 9 \end{vmatrix} - 3 \begin{vmatrix} 8 & 2 \\ 5 & 9 \end{vmatrix} - 7 \begin{vmatrix} 8 & -4 \\ 5 & -12 \end{vmatrix} \right) + 4 \left(7 \begin{vmatrix} 3 & 2 & -8 \\ 9 & 3 & -7 \end{vmatrix} + \right.$$

$$\left. + 7 \begin{vmatrix} -4 & -8 \\ -12 & 3 \end{vmatrix} - 7 \begin{vmatrix} -4 & 2 \\ -12 & 9 \end{vmatrix} \right) - 2 \left(-3 \begin{vmatrix} 2 & -8 \\ 9 & 3 \end{vmatrix} + 7 \begin{vmatrix} 7 & -8 \\ 0 & 3 \end{vmatrix} - 7 \begin{vmatrix} 7 & 2 \\ 0 & 9 \end{vmatrix} \right) -$$

$$- 6 \left(-3 \begin{vmatrix} -4 & -8 \\ -12 & 3 \end{vmatrix} - 3 \begin{vmatrix} 7 & -8 \\ 0 & 3 \end{vmatrix} - 7 \begin{vmatrix} 7 & -4 \\ 0 & -12 \end{vmatrix} \right) + 2 \left(-3 \begin{vmatrix} -4 & 2 \\ -12 & 9 \end{vmatrix} - 3 \begin{vmatrix} 7 & 2 \\ 0 & 9 \end{vmatrix} \right)$$

$$- 7 \begin{vmatrix} 7 & -4 \\ 0 & -12 \end{vmatrix} \right) - 10 \left(7 \begin{vmatrix} -8 & 2 & -8 \\ 9 & 3 & -7 \end{vmatrix} + 7 \begin{vmatrix} 8 & -8 \\ 5 & 3 \end{vmatrix} - 7 \begin{vmatrix} 8 & 2 \\ 5 & 9 \end{vmatrix} \right) +$$

$$+ 9 \left(-3 \begin{vmatrix} 2 & -8 \\ 9 & 3 \end{vmatrix} + 7 \begin{vmatrix} 7 & -8 \\ 0 & 3 \end{vmatrix} - 7 \begin{vmatrix} 7 & 2 \\ 0 & 9 \end{vmatrix} \right) - 6 \left(-3 \begin{vmatrix} 8 & -8 \\ 5 & 3 \end{vmatrix} + 8 \begin{vmatrix} 7 & -8 \\ 0 & 3 \end{vmatrix} - \right.$$

$$\begin{aligned}
& +7 \begin{vmatrix} 7 & 8 \\ 0 & 5 \end{vmatrix} + 2 \left(-3 \begin{vmatrix} 8 & 2 \\ 5 & 9 \end{vmatrix} + 8 \begin{vmatrix} 7 & 2 \\ 0 & 9 \end{vmatrix} - 7 \begin{vmatrix} 7 & 8 \\ 0 & 5 \end{vmatrix} \right) - \\
& -3 \left(7 \begin{vmatrix} -8 & -4 & -8 \\ -12 & 3 \end{vmatrix} - 3 \begin{vmatrix} 8 & -8 \\ 5 & 3 \end{vmatrix} - 7 \begin{vmatrix} 8 & -4 \\ 5 & -12 \end{vmatrix} \right) + 9 \begin{vmatrix} -4 & -8 \\ -12 & 3 \end{vmatrix} \\
& -3 \left(\begin{vmatrix} 7 & -8 \\ 0 & 3 \end{vmatrix} - 7 \begin{vmatrix} 7 & -4 \\ 0 & -12 \end{vmatrix} \right) + 2 \left(-3 \begin{vmatrix} 8 & -8 \\ 5 & 3 \end{vmatrix} - 8 \begin{vmatrix} 7 & -8 \\ 0 & 3 \end{vmatrix} - 7 \begin{vmatrix} 7 & 8 \\ 0 & 5 \end{vmatrix} \right) \\
& + 2 \left(-3 \begin{vmatrix} 8 & -4 \\ 5 & -12 \end{vmatrix} + 8 \begin{vmatrix} 7 & -4 \\ 0 & -12 \end{vmatrix} + 3 \begin{vmatrix} 7 & 8 \\ 0 & 5 \end{vmatrix} \right) + \\
& + \left(7 \begin{vmatrix} -8 & -4 & 2 \\ -12 & 9 \end{vmatrix} - 3 \begin{vmatrix} 8 & 2 \\ 5 & 9 \end{vmatrix} - 7 \begin{vmatrix} 8 & -4 \\ 5 & -12 \end{vmatrix} \right) + 9 \begin{vmatrix} -4 & 2 \\ -12 & 9 \end{vmatrix} - \\
& -3 \begin{vmatrix} 7 & 2 \\ 0 & 9 \end{vmatrix} - 7 \begin{vmatrix} 7 & -4 \\ 0 & -12 \end{vmatrix} + 2 \left(-3 \begin{vmatrix} 8 & 2 \\ 5 & 9 \end{vmatrix} + 8 \begin{vmatrix} 7 & 2 \\ 0 & 9 \end{vmatrix} - 7 \begin{vmatrix} 7 & 8 \\ 0 & 5 \end{vmatrix} \right) + \\
& + 6 \left(-3 \begin{vmatrix} 8 & -4 \\ 5 & -12 \end{vmatrix} + 8 \begin{vmatrix} 7 & -4 \\ 0 & -12 \end{vmatrix} + 3 \begin{vmatrix} 7 & 8 \\ 0 & 5 \end{vmatrix} \right) =
\end{aligned}$$

$$\begin{aligned}
&= 7 \left(-9 \left(3(6+72) + 7(-12-96) - 7(-36+24) \right) - \right. \\
&\quad - 2 \left(-8(6+72) + 7(24+40) - 7(72-10) \right) - \\
&\quad - 6 \left(-8(-12-96) - 3(24+40) - 7(-96+20) \right) + \\
&\quad \left. + 2 \left(-8(-36+24) - 3(72-10) - 7(-96+20) \right) \right) +
\end{aligned}$$

$$\begin{aligned}
&+ 4 \left(7 \left(3(6+72) + 7(-12-96) - 7(-36+24) \right) - \right. \\
&\quad - 2 \left(-3(6+72) + 7(21-0) - 7(63-0) \right) - \\
&\quad - 6 \left(-3(-12-96) - 3(21-0) - 7(-84-0) \right) + \\
&\quad \left. + 2 \left(-3(-36+24) - 3(63-0) - 7(-84-0) \right) \right) - \\
&- 10 \left(7 \left(-8(6+72) + 7(24-40) - 7(72-10) \right) + \right. \\
&\quad \left. + 9 \left(-3(6+72) + 7(21-0) - 7(63-0) \right) - \right.
\end{aligned}$$

$$-6(-3(24+40)+8(21-0)-7(35-0)) + \\ +2(-3(72-10)+8(63-0)-7(35-0)) \quad \text{---}$$

$$-3 \left(\begin{aligned} &7(-8(-12-96)-3(24+40)-7(-96+20)) + \\ &+9(-3(-12-96)-3(21-0)-7(-84-0)) + \\ &+2(-3(24+40)-8(21-0)-7(35-0)) + \\ &+2(-3(-96+20)+8(-84-0)+3(35-0)) \end{aligned} \right) +$$

$$+ \left(\begin{aligned} &7(-8(-36+24)-3(72-10)-7(-96+20)) + \\ &+9(-3(-36+24)-3(63-0)-7(-84-0)) + \\ &+2(-3(72-10)+8(63-0)-7(35-0)) + \\ &+6(-3(-96+20)+8(-84-0)+3(35-0)) \end{aligned} \right) =$$

$$\begin{aligned}
&= 7 \left(-9(3 \cdot 78 + 7 \cdot (-108) - 7 \cdot (-12)) - 2(-8 \cdot 78 + 7 \cdot 64 - 7 \cdot 62) - \right. \\
&\quad \left. - 6(-8 \cdot (-108) - 3 \cdot 64 - 7 \cdot (-76)) + 2(-8 \cdot (-12) - 3 \cdot 62 - 7 \cdot (-76)) \right) + \\
&+ 4 \left(7(3 \cdot 78 + 7 \cdot (-108) - 7 \cdot (-12)) - 2(-3 \cdot 78 + 7 \cdot 21 - 7 \cdot 63) - \right. \\
&\quad \left. - 6(-3 \cdot (-108) - 3 \cdot 21 - 7 \cdot (-84)) + 2(-3 \cdot (-12) - 3 \cdot 63 - 7 \cdot (-84)) \right) - \\
&- 10 \left(7(-8 \cdot 78 + 7 \cdot (-16) - 7 \cdot 62) + 9(-3 \cdot 78 + 7 \cdot 21 - 7 \cdot 63) - \right. \\
&\quad \left. - 6(-3 \cdot 64 + 8 \cdot 21 - 7 \cdot 35) + 2(-3 \cdot 62 + 8 \cdot 63 - 7 \cdot 35) \right) - \\
&- 3 \left(7(-8 \cdot (-108) - 3 \cdot 64 - 7 \cdot (-76)) + 9(-3 \cdot (-108) - 3 \cdot 21 - 7 \cdot (-84)) + \right. \\
&\quad \left. + 2(-3 \cdot 64 - 8 \cdot 21 - 7 \cdot 35) + 2(-3 \cdot (-76) + 8 \cdot (-84) + 3 \cdot 35) \right) + \\
&+ \left(7(-8 \cdot (-12) - 3 \cdot 62 + 7 \cdot (-76)) + 9(-3 \cdot (-12) - 3 \cdot 63 - 7 \cdot (-84)) + \right. \\
&\quad \left. + 2(-3 \cdot 62 + 8 \cdot 63 - 7 \cdot 35) + 6(-3 \cdot (-76) + 8 \cdot (-84) + 3 \cdot 35) \right) =
\end{aligned}$$

$$\begin{aligned}
&= 7 \left(-9(234 - 756 + 84) - 2(-624 + 448 - 434) - \right. \\
&\quad \left. - 6(864 - 192 + 532) + 2(96 - 186 + 532) \right) + \\
&\quad + 4 \left(7(234 - 756 + 84) - 2(-234 + 147 - 441) - \right. \\
&\quad \left. - 6(324 - 63 + 588) + 2(36 - 189 + 588) \right) - \\
&\quad - 10 \left(7(-624 - 112 - 434) + 9(-234 + 147 - 441) - \right. \\
&\quad \left. - 6(-192 + 168 - 245) + 2(-186 + 504 - 245) \right) - \\
&\quad - 3 \left(7(864 - 192 + 532) + 9(324 - 63 + 588) + \right. \\
&\quad \left. + 2(-192 - 168 - 245) + 2(228 - 672 + 105) \right) + \\
&\quad + \left(7(96 - 186 - 532) + 9(36 - 189 + 588) + \right. \\
&\quad \left. + 2(-186 + 504 - 245) + 6(228 - 672 + 105) \right) =
\end{aligned}$$

$$\begin{aligned}
&= 7 \cdot (-9 \cdot (-438) - 2(-610) - 6(1204) + 2 \cdot 442) + \\
&\quad + 4 \left(7 \cdot (-438) - 2(-528) - 6 \cdot 849 + 2 \cdot 435 \right) - \\
&\quad - 10 \left(7 \cdot (-1170) + 9(-528) - 6(-269) + 2 \cdot 243 \right) -
\end{aligned}$$

$$-3 \left(7 \cdot 1204 + 9 \cdot 849 + 2 \cdot (-605) + 2 \cdot (-339) \right) +$$

$$+ \left(7 \cdot (-622) + 9(435) + 2(73) + 6 \cdot (-339) \right) =$$

$$= 7 \left(3942 + 1220 - 7224 + 884 \right) +$$

$$+ 4 \left(-3066 + 1056 - 5094 + 870 \right) -$$

$$-10 \left(-8190 + 4752 + 1614 + 486 \right) -$$

$$-3 \left(8428 + 7641 - 1210 - 678 \right) +$$

$$+ \left(-4354 + 3915 + 146 + 2034 \right) = 7 \cdot (-1178) + 4(-6234) -$$

$$-10(-10842) - 3(14181) + (-2327) = -8246 + 24936 +$$

$$+ 108420 - 42543 - 2327 = 30368$$