12. Since the given matrix is lower triangular, the determinant equals the product of the diagonal elements, \( \det A = 4(-1)3(-3) = 36 \).

20. Since

\[
\begin{vmatrix}
 a & b \\
 c & d \\
\end{vmatrix} = ad - bc \quad \text{and} \quad
\begin{vmatrix}
 a & b \\
 kc & kd \\
\end{vmatrix} = a(kd) - (kc)b = k(ad - bc),
\]

the determinant is multiplied by \( k \) when row 2 is scaled by \( k \).

22. Since

\[
\begin{vmatrix}
 a & b \\
 c & d \\
\end{vmatrix} = ad - bc \quad \text{and} \quad
\begin{vmatrix}
 a + kc & b + kd \\
 c & d \\
\end{vmatrix} = (a + kc)d - c(b + kd) = ad - bc,
\]

the determinant is unchanged when row 1 is replaced with \( k \) times row 2 plus row 1.

36. There holds \( \det E = 1 \), \( \det A = ad - bc \), and

\[
\det(EA) = \det \begin{bmatrix}
 a & b \\
 ka + c & kb + d \\
\end{bmatrix} = ad - bc = \det A.
\]

38. Since \( \det A = ad - bc \) and

\[
\det(kA) = \det \begin{bmatrix}
 ka & kb \\
 kc & kd \\
\end{bmatrix} = (ka)(kd) - (kb)(kc) = k^2(ad - bc),
\]

\( \det(kA) = k^2 \det A \).