

“A river cuts through a rock, not because of its power but because of its persistence.”



Find the value of each determinant.

1. $\begin{vmatrix} 10 & 6 \\ 5 & 5 \end{vmatrix}$

2. $\begin{vmatrix} 8 & 5 \\ 6 & 1 \end{vmatrix}$

3. $\begin{vmatrix} -7 & 3 \\ -9 & 7 \end{vmatrix}$

4. $\begin{vmatrix} -2 & 4 \\ 3 & -6 \end{vmatrix}$

5. $\begin{vmatrix} 2 & -7 \\ -5 & 3 \end{vmatrix}$

6. $\begin{vmatrix} -6 & -2 \\ 8 & 5 \end{vmatrix}$

7. $\begin{vmatrix} -9 & 0 \\ -12 & -7 \end{vmatrix}$

8. $\begin{vmatrix} 10 & 2 \\ 5 & 1 \end{vmatrix}$

9. $\begin{vmatrix} 15 & 11 \\ 23 & 19 \end{vmatrix}$

10. $\begin{vmatrix} 5 & 1 & -4 \\ 0 & -3 & -6 \\ -1 & -1 & -1 \end{vmatrix}$

11. $\begin{vmatrix} 2 & 1 & 8 \\ 1 & -1 & 1 \\ 3 & -2 & -2 \end{vmatrix}$

12. $\begin{vmatrix} 6 & 3 & -3 \\ 6 & 1 & 4 \\ 0 & 0 & 5 \end{vmatrix}$

Use the value of the determinant to decide if the system of equations will have one solution. **Do NOT actually solve it.**

13. $\begin{cases} 15x + 11y = 36 \\ 4x - 3y = -26 \end{cases}$

14. $\begin{cases} 3x - 6y = 9 \\ -2x + 4y = -6 \end{cases}$

determinant =

one solution? yes / no

determinant =

one solution? yes / no

15. $\begin{cases} 2x - 8y = 9 \\ -x + 4y = -6 \end{cases}$

16. $\begin{cases} 5x - 2y - 7z = 0 \\ -x + 8y + 3z = 6 \\ 2y + 4z = -10 \end{cases}$

determinant =

one solution? yes / no

determinant =

one solution? yes / no