

p. 159 #15

$$\begin{cases} 9a - 3d = 3 \\ -3a + d = -1 \end{cases} \quad \begin{array}{r} 9a - 3d = 3 \\ \underline{-9a + 3d = -3} \\ 0 = 0 \end{array}$$

infinitely
many
solutions

p. 159 #17

$$\begin{cases} 2x - 3y = 6 \\ 6x - 9y = 9 \end{cases} \quad \begin{array}{r} -6x + 9y = -18 \\ \underline{6x - 9y = 9} \\ 0 = -9 \end{array}$$

no solution

[if we get $0=0$,
infinitely many
solutions]

topic: solving linear systems with a

MATRIX

Do p. 159 #9 with a
MATRIX.

STANDARD
FORM

① write matrix

$$\begin{cases} 3a + 4b = 9 \\ -3a - 2b = -3 \end{cases}$$

$$\begin{bmatrix} 3 & 4 & 9 \\ -3 & -2 & -3 \end{bmatrix} \leftarrow \begin{array}{l} \text{matrix!} \\ 2 \text{ rows, } 3 \text{ col} \\ = 2 \times 3 \end{array}$$

② rref(this matrix

$$\begin{bmatrix} 1 & 0 & -1 \\ 0 & 1 & 3 \end{bmatrix} \quad \begin{array}{l} a = -1 \\ b = 3 \end{array}$$

* reduced row echelon form

Do p. 159 #9 with a
MATRIX.

matrix representing this linear system: $\begin{cases} 3a + 4b = 9 \\ -3a - 2b = -3 \end{cases}$

① make matrix $\begin{bmatrix} 3 & 4 & 9 \\ -3 & -2 & -3 \end{bmatrix}$

← matrix!

2 x 3

↑ rows

↑ columns

"two by three"

r x c

② math: rref()

"reduced row-
echelon form"

③ write rref version $\begin{bmatrix} 1 & 0 & -1 \\ 0 & 1 & 3 \end{bmatrix}$

last column
gives
answer

$a = -1$

$b = 3$