

Show all work, simplify all answers, leave all answers exact.

Solve the system:

$$\begin{aligned}x + y + z &= 4 \\2x + y - z &= 0 \\x + 2y - 2z &= -6\end{aligned}$$

Solve the system

$$\begin{aligned}x + y &= -4 \\x - y &= 7\end{aligned}$$

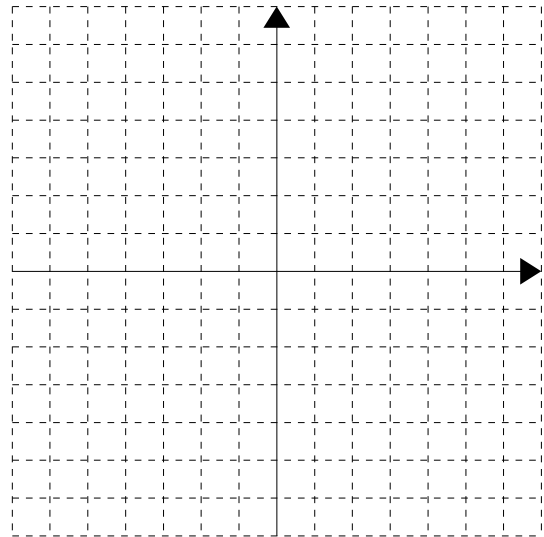
Solve the system

$$\begin{aligned}2x + 3y &= 1 \\ 3x - 6y &= -2\end{aligned}$$

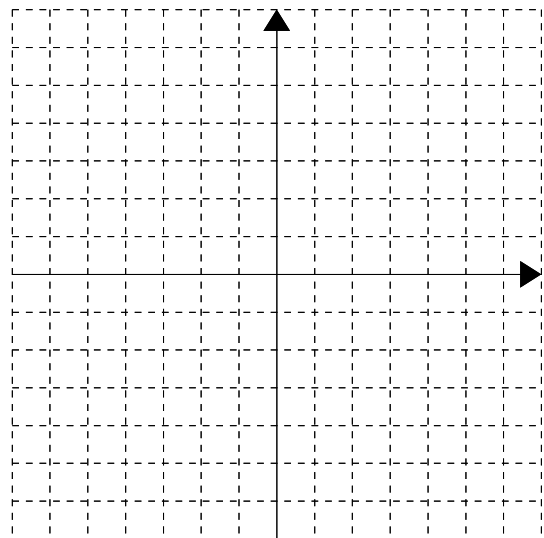
Solve the system

$$\begin{aligned}y &= 3x - 2 \\ x - y &= 5\end{aligned}$$

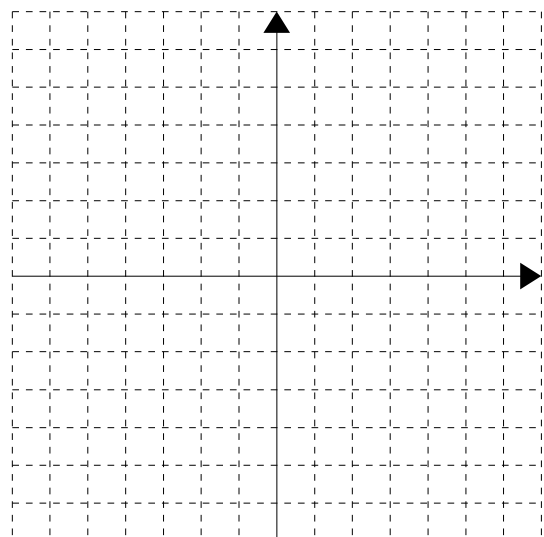
Graph the inequality $y < 2x - 4$



Graph the inequality $y - 3 > 2$



Graph the system $4x + 3y \leq 12$
 $x + y > 2$



Given $a_n = 2n^2 - n$ find a_4

Find $\sum_{k=2}^4 \frac{1}{k}$

For the recursively defined sequence $a_1 = 3$, $a_{n+1} = 1 - 2a_n$, find a_4

Find the 100th term of the arithmetic sequence: 30, 26, 22, 18...

Find the sum of the first 100 terms of the arithmetic sequence: 30, 26, 22, 18...

For the arithmetic sequence defined by $a=20$, $d=10$ find the sum of all the terms that are less than 100.

Find the 21st term of the geometric sequence defined by $a=1$, $r=2$.

Find $\sum_{k=1}^{20} 2^k$ (Hint: the underlying sequence is geometric.)

Find the sum of all of the terms of the geometric sequence: $2, \frac{2}{3}, \frac{2}{9}, \frac{2}{27} \dots$