

Solve the system of equations according to the following steps:

$$x^2 - y = 3 \quad (1)$$

$$2x + y = 5 \quad (2)$$

1. Use the addition method to reduce the system to a single equation involving only x .
(Hint: You can eliminate y by adding equations (1) and (2), resulting in a quadratic equation in x .)
2. Show that you get the same quadratic equation in x by using the substitution method (i.e., use either equation to solve for y in terms of x , and then substitute for y into the other equation).
3. Solve the quadratic equation from parts (a) and (b) for x . (You can solve by factoring or by using the quadratic equation. You should get two integer solutions for x .)
4. For each of the x -values from part (d), solve for the corresponding values of y . (Use either of the original equations (1) or (2); in particular, in part (b) you should have solved for y in terms of x —use that!)