One Pair for Both

SY02-V1 · storyboard · SY02 A system and its solution. Read each picture with its sentences.

Picture 1

Does $(6, 0)$ solve the system $x + 3y = 6$, $2x - 5y = 1$?

$$6 + 3(0) = 6$$ first: true

$$2(6) - 5(0) = 12$$ second: not 1

1. Does six, zero solve the system x + 3y = 6 and 2x − 5y = 1?
2. In the first equation: six plus three times zero is six.
3. True.
4. In the second: two times six minus five times zero is twelve, not one.
5. False.

Picture 2

Trap $(6, 0)$

$\times$ true in the first $\Rightarrow$ a solution

$\checkmark$ true in both $\Rightarrow$ a solution

6. Watch for the trap: checking one equation only.
7. Six, zero fits the first equation but not the second.
8. A solution of the system must be true in both.

Picture 3

Solutions of $x + 3y = 6$: $(0, 2)$, $(3, 1)$, $(6, 0)$. Solutions of $2x - 5y = 1$: $(3, 1)$, $(8, 3)$. Which pair is in both lists?

$\boxed{(3, 1)}$ in both lists

Check: $3 + 3(1) = 6$ ✓

Check: $2(3) - 5(1) = 1$ ✓

9. Here are some solutions of each equation.
10. Which pair is in both lists?
11. Three, one is in both lists.
12. Check it.
13. In the first equation, three plus three is six.
14. In the second, six minus five is one.
15. True in both: three, one solves the system.