1. Multiply x + y = 5 by 3. Write the new equation.

3 to every term

Answer: 3x + 3y = 15

2. Does (2, 3) solve both x + y = 5 and 3x + 3y = 15?

2+3 = 5; 6+9 = 15

Answer: Yes - same solutions

3. Add the equations: x + y = 8 and x - y = 2.

Combine left, combine right

Answer: 2x = 10

4. From 2x = 10 above, finish the system.

x = 5; then 5 + y = 8

Answer: (5, 3)

5. Multiply 2x + y = 7 by -2.

-2 to every term

Answer: -4x - 2y = -14

6. What multiplier makes the y's cancel in: 3x + 2y = 12 and x - y = 1?

Second times 2: 2x - 2y = 2

+2y and -2y cancel

Answer: multiply second by 2

7. Add: 4x + 2y = 14 and 3x - 2y = 7. Then solve fully.

Add: 7x = 21, so x = 3

Back-substitute: 12 + 2y = 14, y = 1

Answer: (3, 1)

8. Why is adding two true equations allowed?

Both sides equal - adding equals to equals

Answer: equals added to equals stay equal

9. Show (4, 1) solves x + 2y = 6 AND the sum of [x + 2y = 6] + [2x - y = 7]. ★ challenge

Sum: 3x + y = 13

3(4) + 1 = 13 yes

Answer: works in both - property confirmed

10. Build a NEW equation with the same solution as x + y = 5 by multiplying by 4, then adding x - y = 3. Ver

4x + 4y = 20; add: 5x + 3y = 23

5(4) + 3(1) = 23

Answer: 5x + 3y = 23 - (4,1) works