

One way of solving simultaneous equations is to use the substitution method.

If $X - 2Y = 8$, and $X + Y = 5$ what are the values of X and Y ?

With the substitution method, choose one of the equations to easily isolate X or Y .

For $X + Y = 5$, we can subtract Y from both sides to isolate X .

To discover $X = 5 - Y$.

Substitute this value of X into the other equation.

$X - 2Y = 8$, becomes $5 - Y - 2Y = 8$.

Now simplify:

$5 - 3Y = 8$.

So $5 - 3Y = 8$.

Isolate Y by subtracting five from both sides so that $-3Y = 3$.

If $-3Y = 3$, divide each side by negative three, which means $Y = -1$.

Now substitute the Y value into one of the original equations to get the value of X .

If $Y = -1$ and $X - 2Y = 8$ then $X = 6$.

That is how to find X and Y using the substitution method.