

Step-1

Given equations are

$$ax + 2y = 0$$

$$2x + ay = 0$$

We have to find that which values of a , there is a whole line of solutions.

Step-2

For $a = 2$, from the given equations we have only one equation $x + y = 0$, this is a straight line passing through the origin. And for $a = -2$, from the given equations we have only one equation $x - y = 0$, this is also a straight line passing through the origin.

Therefore for $a = 2, -2$ the given system has a whole line of solutions.

For all other values of a , the given system has the only solution $x = y = 0$