2(ax-by)+(a+4b)=0,

2(bx+ay)+(b-4a)=0

We can rewrite as

2a*x - 2b*y = -a-4b

2b*x+2a*y = 4a - b

if a=b=0 then we get 0=0, 0=0. so $\forall x, y$ (x, y) - solution.

Suppose that a=0, $b \neq 0$. Then

-2b*y=-4b, 2bx=-b

y=2, x=-0.5

In case b=0, $a \neq 0$:

2a*x=-a, 2a*y=4a

x=-0.5, y=2

Now we can consider case $a \neq 0$ and $b \neq 0$.

Then from first equation

$2a*x = 2b*y - a - 4b$

$$x = \frac{2b*y - a - 4b}{2a}$$

we can substitute x to the second equation

$$2b*\frac{2b*y - a - 4b}{2a} + 2a*y = 4a - b$$

$$\frac{b*(2b*y - a - 4b)}{a} + 2a*y = 4a - b$$

$$\frac{b*2b}{a}*y - \frac{(a+4b)b}{a} + 2a*y = 4a - b$$

$$(\frac{b*2b}{a} + 2a)*y = \frac{(a+4b)b}{a} + 4a - b$$

$$(\frac{2(a^2+b^2)}{a})*y = \frac{(a+4b)b}{a} + 4a - b$$

$a^2 + b^2 > 0$

Then we can divide

$$y=(\frac{(a+4b)b}{a}+4a-b)*\frac{a}{2(a^2+b^2)}=\frac{(a+4b)b+4a^2-ab}{a}*\frac{a}{2(a^2+b^2)}=$$

$$=\frac{4(a^2+b^2)}{a}*\frac{a}{2(a^2+b^2)}=2$$

But $x=\frac{2b*y-a-4b}{2a}=\frac{2b*2-a-4b}{2a}=\frac{4b-a-4b}{2a}=-\frac{a}{2a}=-0.5$

So in this case x=-0.5, y=2.

And finally we get that if a=b=0 $\forall x,y$ (x,y) - solution. In other cases x=-0.5, y=2.