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Section: A.

1) <sup>a)</sup>  $(1, p) \rightarrow (-3, p+9)$

where  $p = (-1)^n \times n$  here  $n = 49$ ,

$$= (-1)^{49} \times 49$$

$$= -49.$$

$$(x_0, y_0) = (1, -49)$$

$$(x_1, y_1) = (-3, -49+9)$$
$$= (-3, -40)$$

We know,  $m = \frac{y_1 - y_0}{x_1 - x_0}$

$$= \frac{-40 + 49}{-3 - 1} = \frac{9}{-4} = -2.25.$$

= 3<sup>rd</sup> Octant.

Converting into <sup>1st</sup>~~3rd~~ Octant;

$$x = -x$$

Swap  $(x, y)$



$$x = -x;$$

$$(x_0, y_0) = (-1, -49) \quad \text{Swap}(x_0, y_0) = (-49, -1)$$

$$(x_1, y_1) = (3, -40) \quad \text{Swap}(x_1, y_1) = (-40, 3)$$

$\therefore$  Parents  $\leftarrow$   $x_0$ .

$$dy = y_1 - y_0 = 3 - (-1) = 3 + 1 = 4$$

$$dx = x_1 - x_0 = (-40 + 49) = 9.$$

$$\Delta E = 2dy = 2 \times 4 = 8$$

$$\Delta NE = 2(dy - dx) = 2(4 - 9) = -10.$$

$$d = 2dy - dx = 2 \times 4 - 9 = 8 - 9 = -1.$$

$$d_{\text{new}} = d_{\text{old}} + \Delta E / \Delta NE.$$

	$-1 \times 0, E$	$-1 + 8 = 7$ NE	$7 + (-10) = -3$	$-3 + 8 = 5$	$5 + (-10) = -5$
d	<del><math>d = -1</math></del>	7	-3	5	-5
(x, y)	E(-48, -1)	NE(-47, 0)	E(-46, 0)	NE(-45, 1)	E(-44, 1)

	$-5 + 8 = 3$	$3 + (-10) = -7$	$-7 + 8 = 1$	$1 + (-10) = -9$	
d	3	-7	1	-9	
(x, y)	NE(-43, 2)	E(-42, 2)	NE(-41, 3)	E(-40, 3)	



<del>(x, y)</del> (x, y)	(48, -1)	(47, 0)	(46, 0)	(45, 1)	(44, 1)	(43, 2)
(y, x)	(1, -48)	(0, -47)	(0, -46)	(-1, -45)	(-1, -44)	(-2, -43)

$$1 = 118 = (1-1) - 8 = 06 - 16 = 106$$

(x, y)	(-42, 2)	(-41, 3)	(-40, 3)
(-y, x)	(-2, -42)	(-3, -41)	(-3, -40)

$$1 = 118 = (1-1) - 8 = 06 - 16 = 106$$

$$1 = 118 = (1-1) - 8 = 06 - 16 = 106$$

(x, y)	(-48, 1)	(-47, 0)	(-46, 0)	(-45, 1)	(-44, 1)	(-43, 2)
(-y, x)	(-1, -48)	(0, -47)	(0, -46)	(-1, -45)	(-1, -44)	(-2, -43)

b) Final Plot for  $(-y, x)$ , where I have considered

$$(-y, x) = (x, -y) = (1, -48), (0, -47) \dots$$

$$(1, -48) = (1, -48)$$

