

36.

$$16(x+1)^2 + 9(y-1)^2 = 144$$

144 144 144

$$\frac{(x+1)^2}{9} + \frac{(y-1)^2}{16} = 1$$

Center (-1, 1)

$$\frac{(x+1)^2}{9} + \frac{(y-1)^2}{16} = 1$$

$$a^2 - b^2 = c^2$$

$$16 - 9 = c^2$$

$$\sqrt{7} = \sqrt{c^2}$$

$$2.65 = c$$

larger $a^2 = 16$
 $a = 4$

X



smaller $b^2 = 9$
 $b = 3$

$x \mid y$
 2.98

$$\frac{y}{5} + \frac{(y-1)^2}{16} = 1$$

$$16 \cdot \frac{(y-1)^2}{16} = \frac{5}{9} \cdot 16$$

$$\sqrt{(y-1)^2} = \sqrt{\frac{80}{9}}$$

$$y-1 = 2.98$$

$$y-1 = 2.98$$

$$y = 3.98$$

$$32 \quad \frac{(x-2)^2}{9} + \frac{(y-2)^2}{4} = 1$$

Center (2, 2)

larger # x Major Horizontal

$$a^2 = 9 \quad a = 3$$

smaller # y Minor Vertical

$$b^2 = 4 \quad b = 2$$

Foci $a^2 - b^2 = c^2$

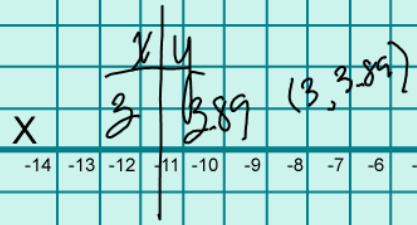
$$9 - 4 = c^2$$

$$5 = c^2$$

$$\pm 2.24 = c$$

on Major Axis

$$\frac{(x-2)^2}{9} + \frac{(y-2)^2}{4} = 1$$



$$\frac{(3-2)^2}{9} + \frac{(y-2)^2}{4} = 1$$

$$\frac{1}{9} + \frac{(y-2)^2}{4} = 1$$

$$4 \cdot \frac{(y-2)^2}{4} = \frac{8}{9} - 4$$

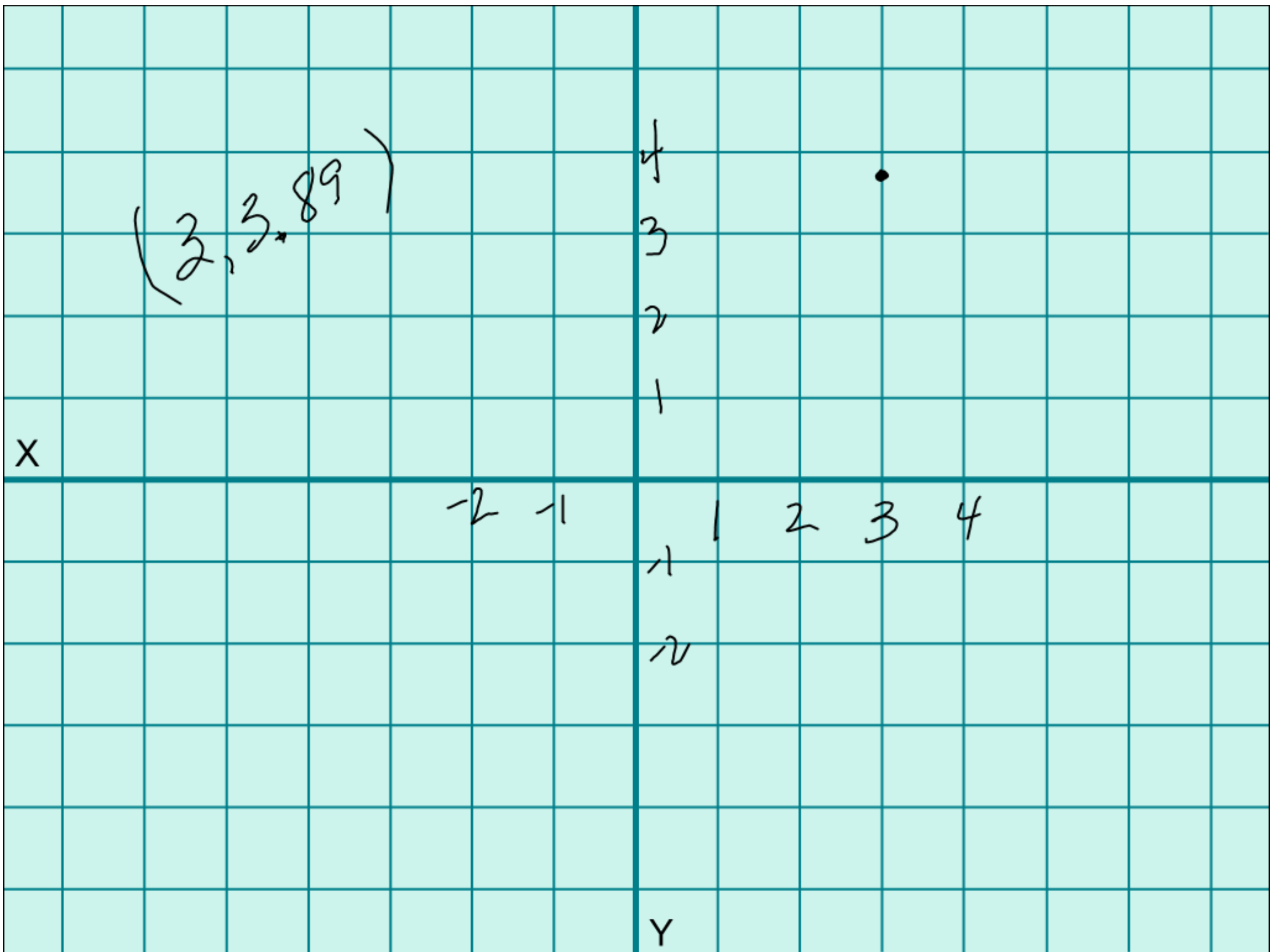
(h, k)
 $(h+a, k)$
 $(h-a, k)$
 $(h, k+b)$
 $(h, k-b)$

$$\sqrt{(y-2)^2} = \sqrt{\frac{32}{9}}$$

$$y-2 = \pm 1.89$$

$$y-2 = 1.89 \quad \text{or} \quad y-2 = -1.89$$

$$y = 3.89$$



$$\frac{x^2}{3^2} + \frac{y^2}{2^2} = 1$$

$$\frac{x^2}{9} + \frac{y^2}{4} = 1$$

X

-14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

10
9
8
7
6
5
4
3
2
1
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10

Y



$$\frac{x^2}{9} - \frac{y^2}{4} = 1$$

Open
left & right

$$\frac{y^2}{16} - \frac{x^2}{9} = 1$$

Open
up & down

$$\frac{x^2}{9} - \frac{y^2}{4} = 1$$

Center (0,0)

$$a^2 = 9$$

$$a = 3$$

X

-14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 1 2 3 4 5 6 7 8 9 10 11 12 13 14

-1

-2

-3

-4

-5

-6

-7

-8

-9

-10

Y