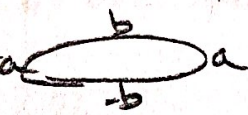
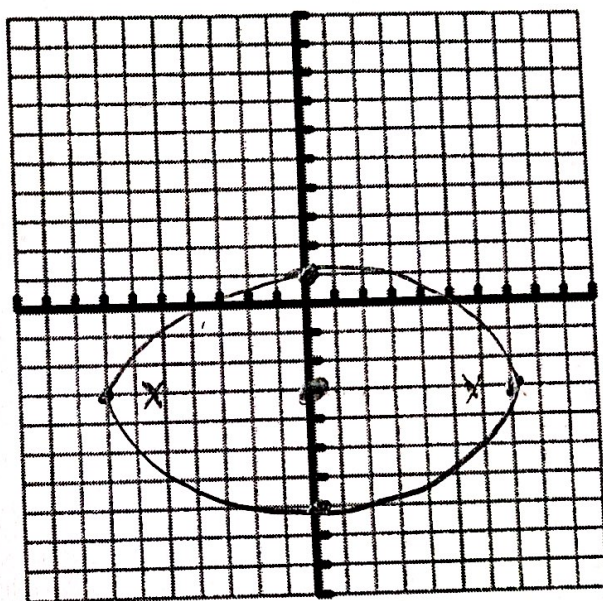


Warm-up 7: Ellipses

$$\frac{x^2}{49} + \frac{(y+3)^2}{16} = 1$$

Horizontal Ellipse 



center = $(0, -3)$

vertices = $(7, -3)$ $(-7, -3)$

co-vertices = $(0, 1)$ $(0, -7)$

foci = $(\pm\sqrt{33}, -3)$

major length = $2a = 2(7) = 14$

minor length = $2b = 2(4) = 8$

$a = 7$
 $b = 4$

$c^2 = 49 - 16$

$c^2 = 33$

$c = \pm\sqrt{33}$

≈ 5.7