

2b)  
p.351

$$y = -4(x+3)^2 - 2$$

$$y = a(x-h)^2 + k$$

(h,k)

vertex (-3, -2)

i)

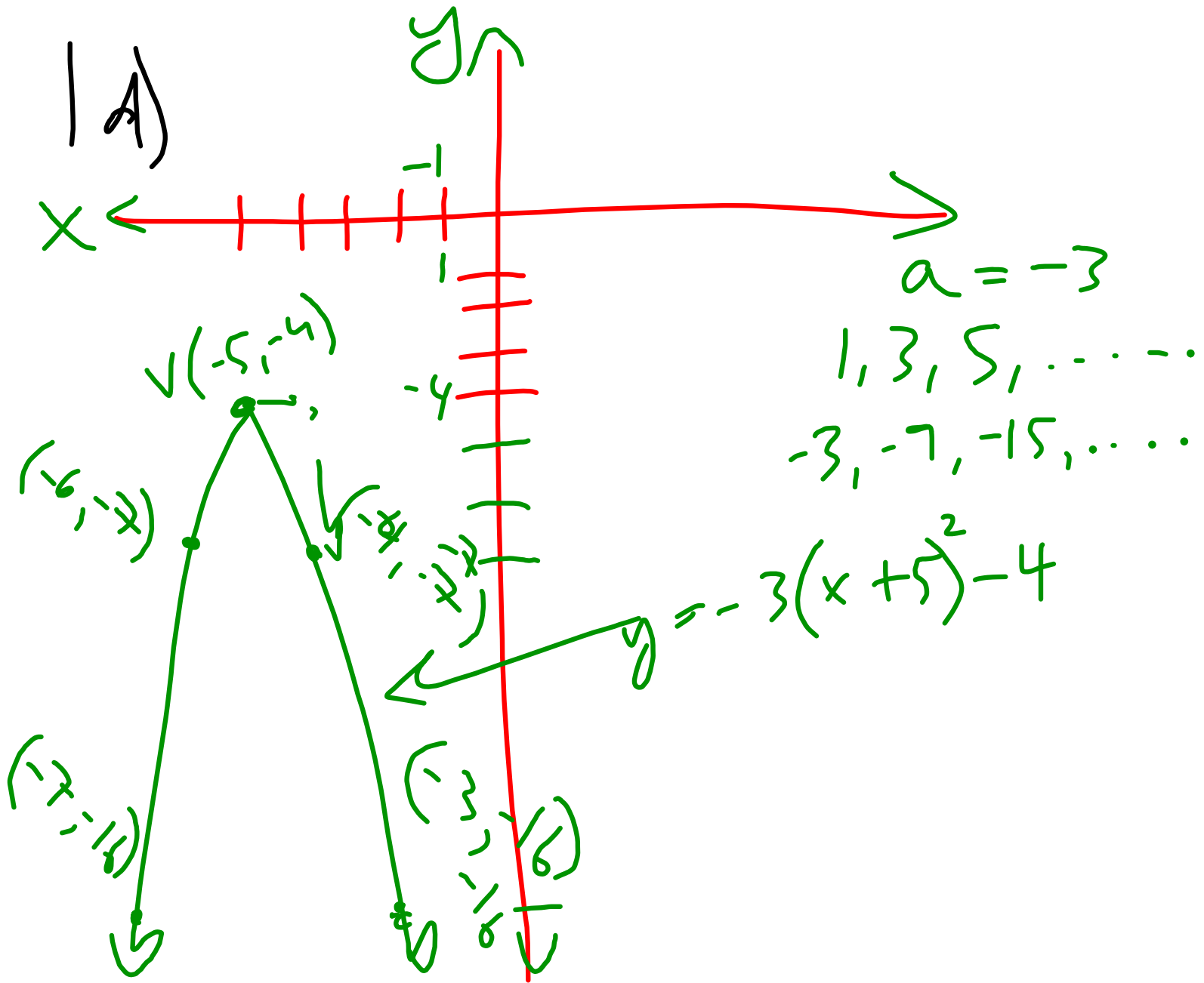
ii)

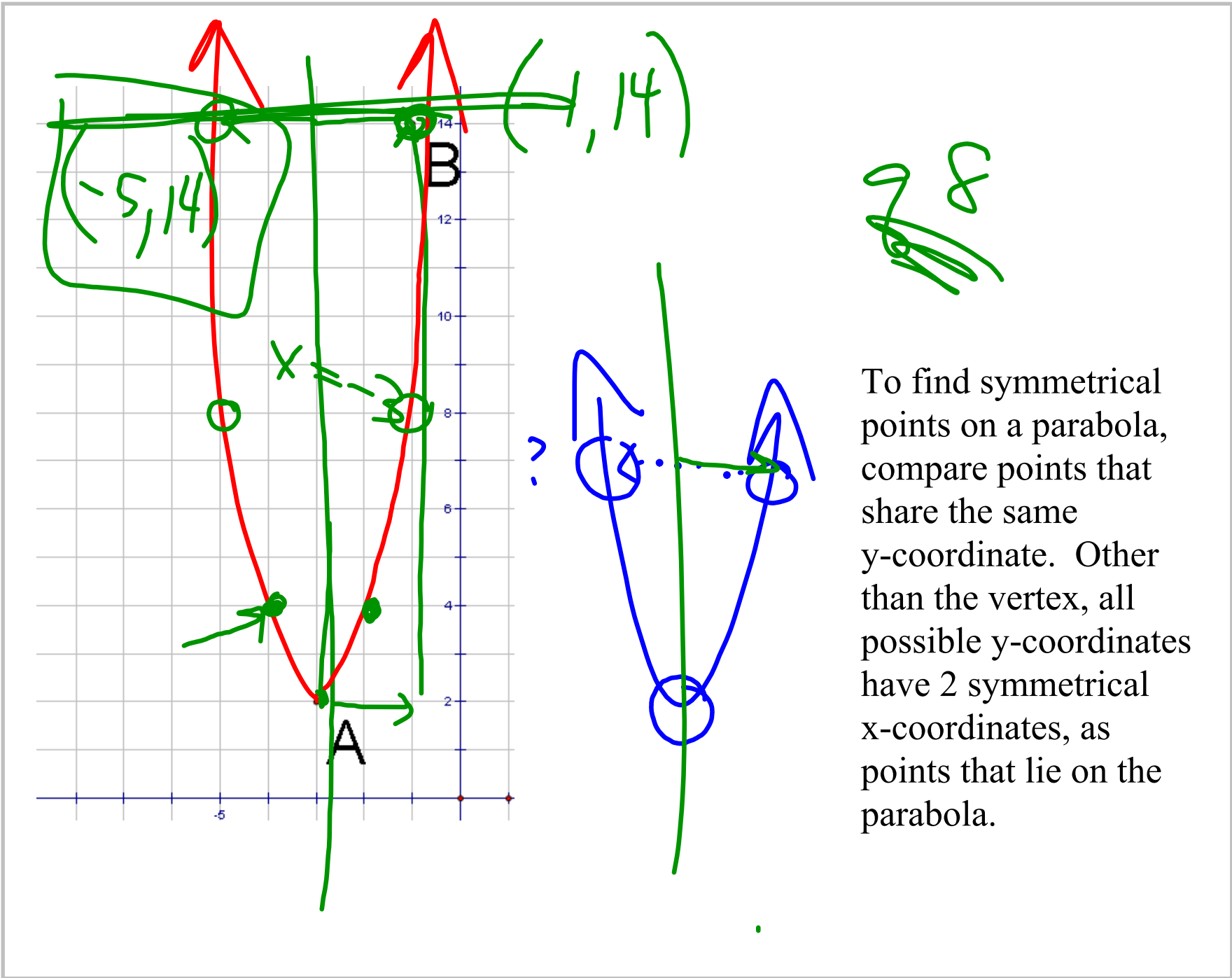
$$x = -3$$

iii)

a = -4, down

in  
VERTEX  
form!





To find symmetrical points on a parabola, compare points that share the same y-coordinate. Other than the vertex, all possible y-coordinates have 2 symmetrical x-coordinates, as points that lie on the parabola.

q7

Write the equation of the quadratic in vertex form, given the vertex and a point that lies on the parabola.

$$y = a(x-h)^2 + k$$

a)  $V(0, 3)$

s1 - sub in vertex

$$y = a(x-0)^2 + 3$$

$$y = ax^2 + 3$$

s2 - sub in given pt to find "a". (2, -5)

$$-5 = a(2)^2 + 3$$

$$-5 = 4a + 3$$

$$-5 - 3 = 4a$$

$$\frac{-8}{4} = \frac{4a}{4} \quad a = -2$$

s3 - write complete vertex form equation with the vertex, that was given, and "a" which we calculated

$$y = -2x^2 + 3$$