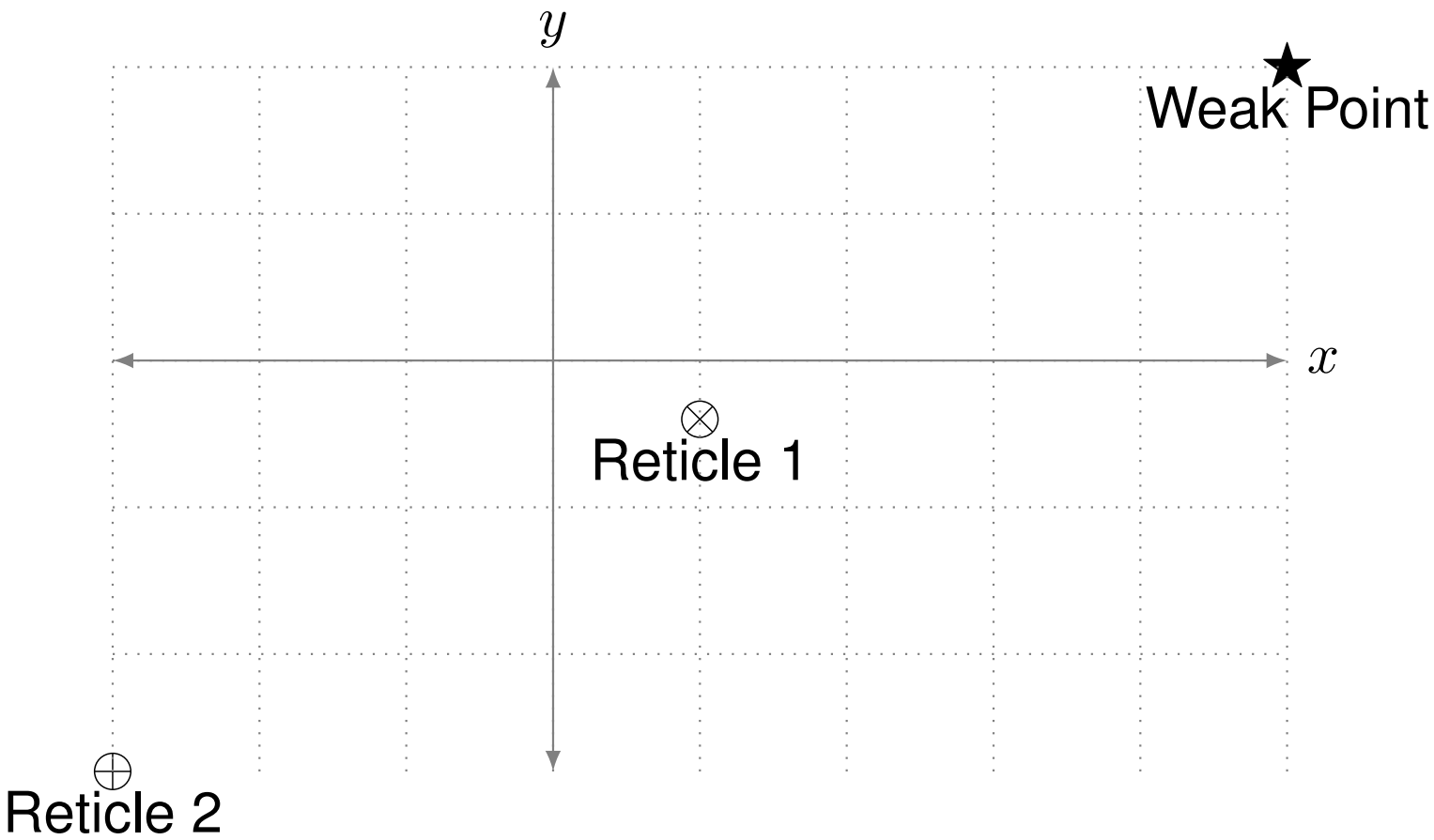
APP Academy

Laser Battleship Cheat Sheet

October 8, 2015


y
x
Weak Point
Reticle 1
Reticle 2

1. Find the slope of the line connecting the three points

$$m = \left(\frac{y_\bigstar - y_\otimes}{x_\bigstar - x_\otimes} \right) \tag{1}$$

2. Plug this slope into the slope intercept form and use the given coordinates of Reticle 1 $(x_\otimes, y_\otimes)$ to find the value for b.

$$y_\otimes = mx_\otimes + b$$

$$y_\otimes = \left(\frac{y_\bigstar - y_\otimes}{x_\bigstar - x_\otimes} \right) x_\otimes + b \tag{2}$$

$$\left[y_\otimes - \left(\frac{y_\bigstar - y_\otimes}{x_\bigstar - x_\otimes} \right) x_\otimes \right] = b$$

4. Now you've got the slope and intercept! You choose any value for the x-coordinate of Reticle 2 $(x_\oplus)$ and plug it into the slope intercept form to get the $y_\oplus$ which falls along the same line!

$$y_\oplus = m\, x_\oplus + b$$

$$y_\oplus = \left(\frac{y_\bigstar - y_\otimes}{x_\bigstar - x_\otimes}\right) x_\oplus + \left[y_\otimes - \left(\frac{y_\bigstar - y_\otimes}{x_\bigstar - x_\otimes}\right) x_\otimes\right] \tag{3}$$

- Pro Tip: Make your life easier and choose an integer value for $x_\oplus$!