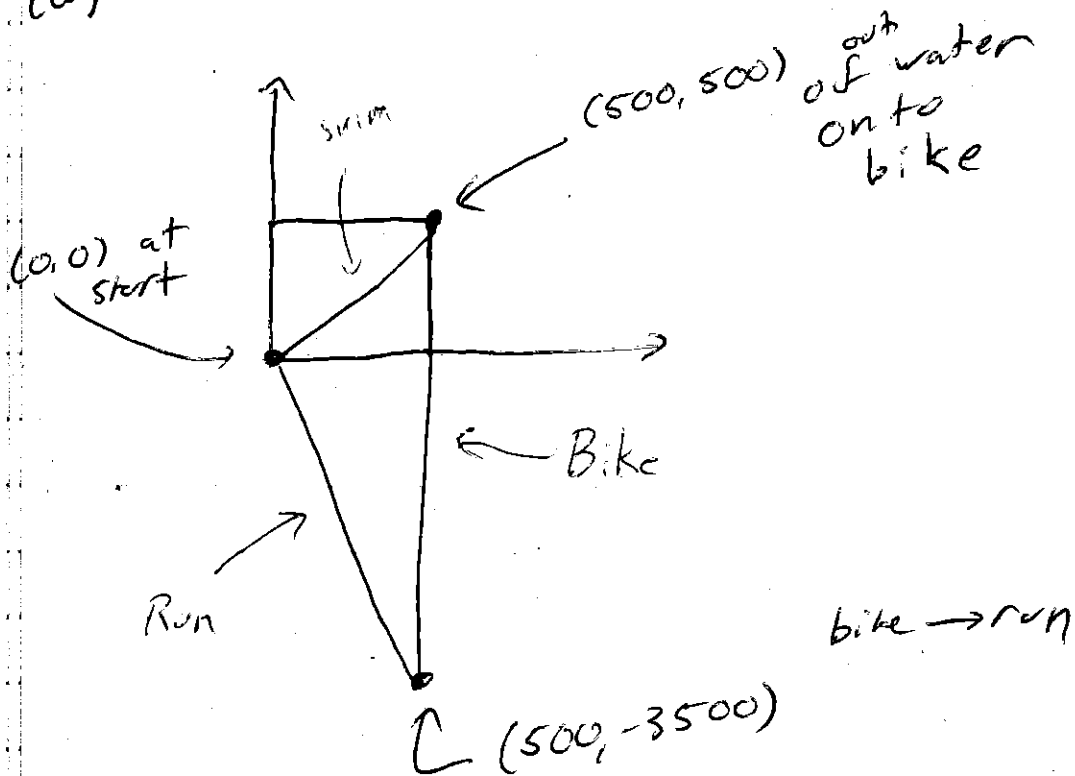


# Solutions

(a)



(b) Swim:  $d((0,0), (500)) = \sqrt{(500-0)^2 + (500-0)^2}$   
 ~~$500\sqrt{2}$~~   $= 500\sqrt{2}$   
 $\approx 707.11 \text{ m}$

Bike:  $4 \text{ km} = 4000 \text{ m}$  (given)

Run:  $d((500,-3500), (0,0))$   
 $= \sqrt{500^2 + 3500^2}$   
 $= \sqrt{12,500,000}$   
 $\approx 3535.43 \text{ m}$

$$(\text{c}) (\text{dis}) = (\text{Rate}) \cdot (\text{Time})$$

$$\Rightarrow \text{Time} = \frac{\text{dis}}{\text{rate}}$$

	Bobby	Jerry
Swim	$\frac{707.11}{2} = 353.56$	$\frac{707.11}{3} = 235.70$
Bike	$\frac{4000}{15} = 266.67$	$\frac{4000}{12} = 333.33$
Run	$\frac{3535.43}{6} = 589.24$	$\frac{3535.43}{5} = 707.09$

$$(d) t_{\text{total}} = t_{\text{swim}} + t_{\text{bike}} + t_{\text{run}}$$

$$\text{Bobby: } 353.56 + 266.67 + 589.24 = 1209.47$$

$$\text{Jerry: } 235.7 + 333.33 + 707.09 = 1276.12$$

Bobby Wins