**DO DOGS KNOW CALCULUS?**

*B*

 Dr. Elvis

*x*

*A*

*C*

*D*

*y*

*z*

*r =* 6.40 m/s running speed

*s =*  0.91 m/s swimming speed

*T* = total time = time running + time swimming

$$T\left(y\right)=\frac{AD}{r}+\frac{DB}{s}$$

$$=\frac{z-y}{r}+\frac{\sqrt{x^{2}+y^{2}}}{s}$$

*z*  = 15 m

*x* = 10 m

min\_ y T(y)

FOC $T^{'}\left(y^{\*}\right)=0 ή \frac{dT(y^{\*})}{dy}=0$

SOC $Τ^{''}\left(y^{\*}\right)>0$