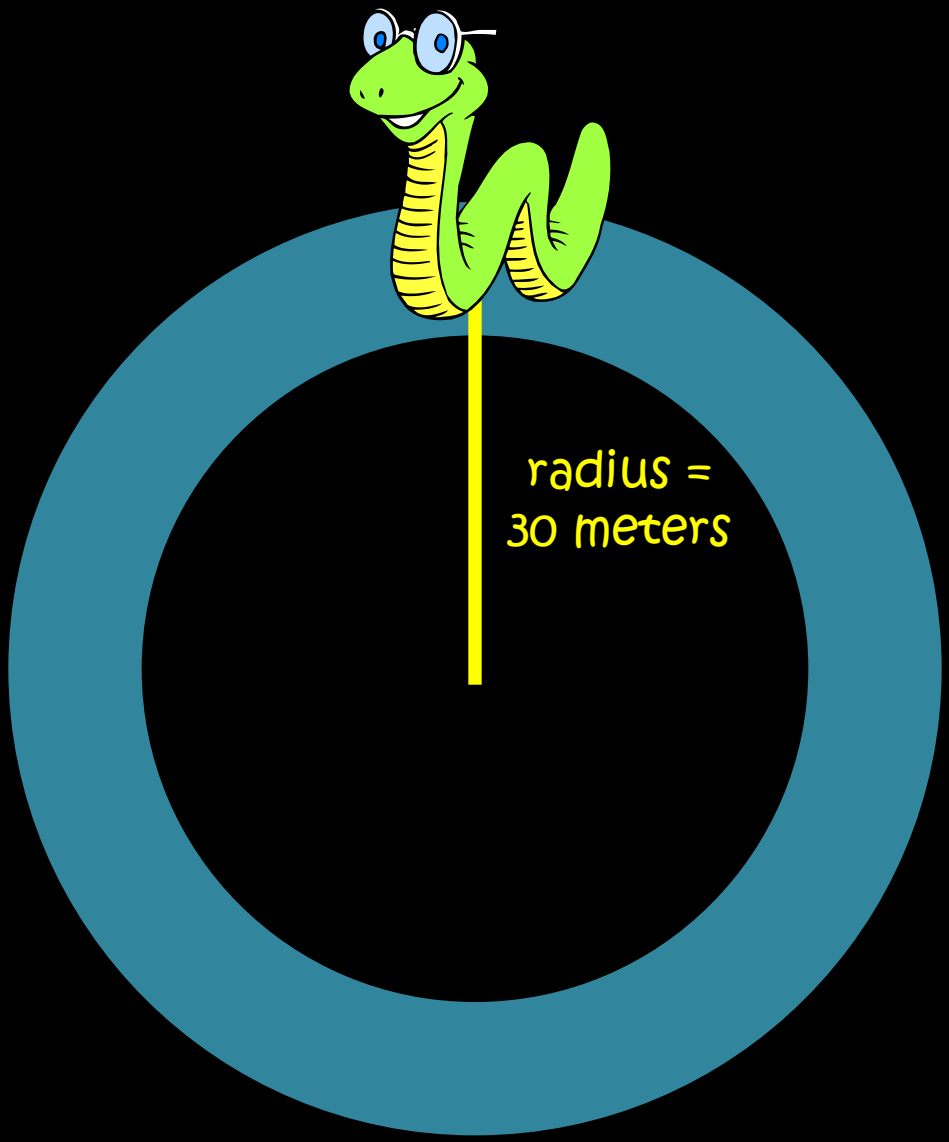
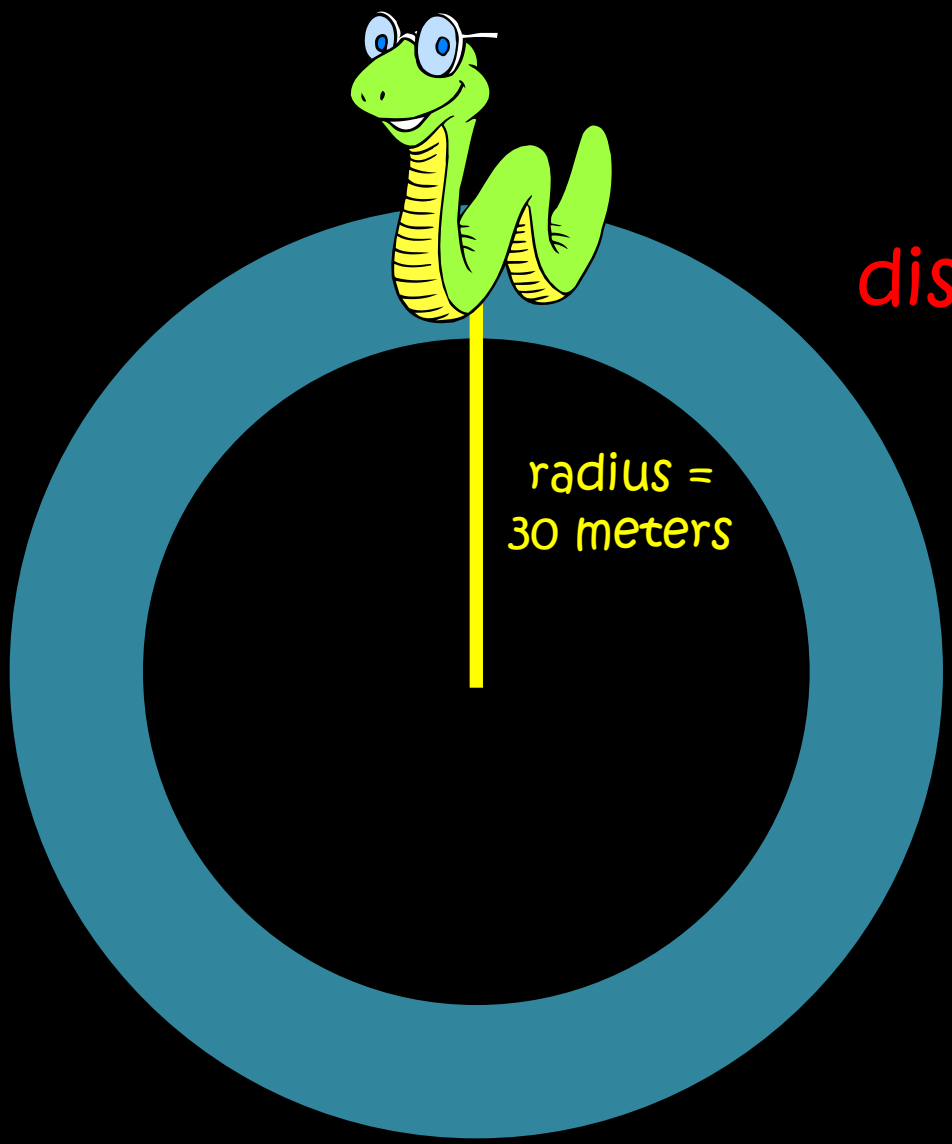
What is the distance traveled by the worm as he makes one complete trip around the track? Round your answer to two decimal places.



Solution:

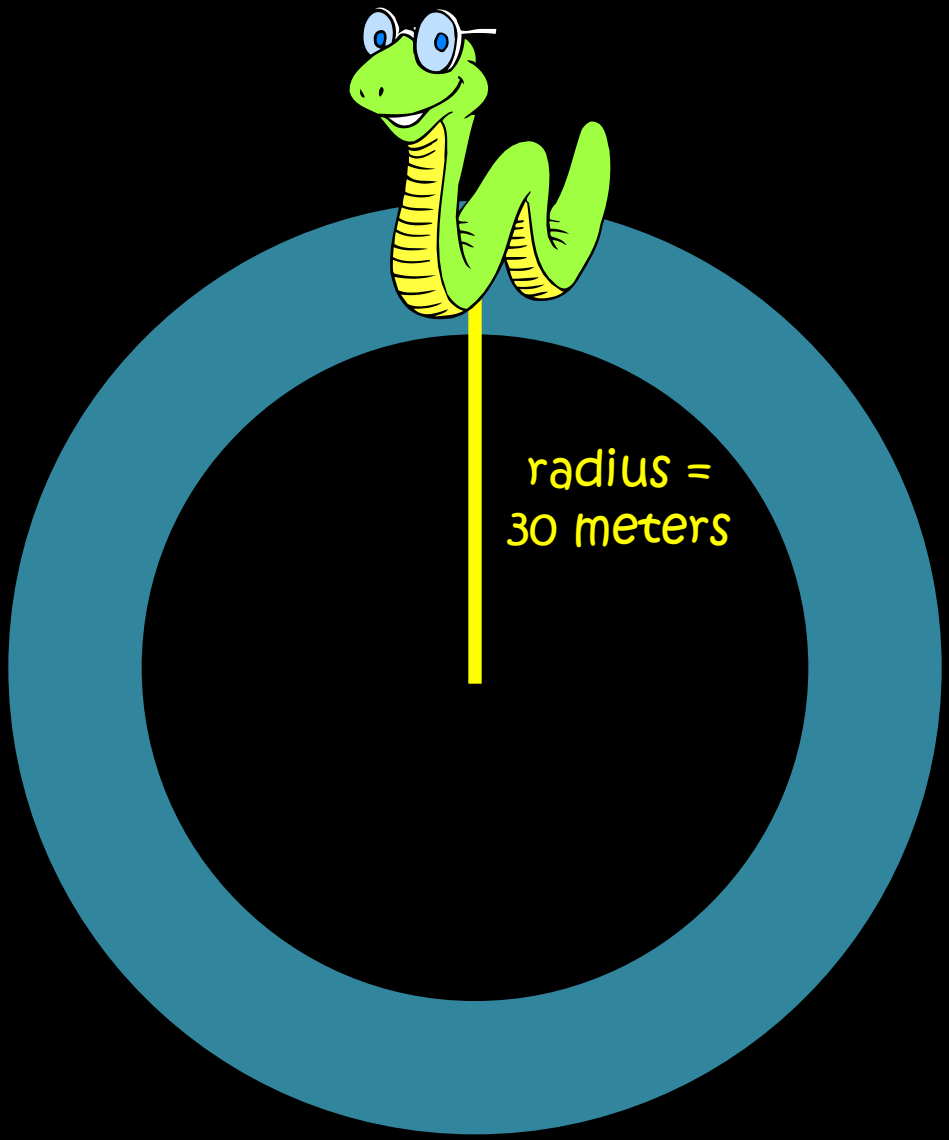


distance = $2\pi r$

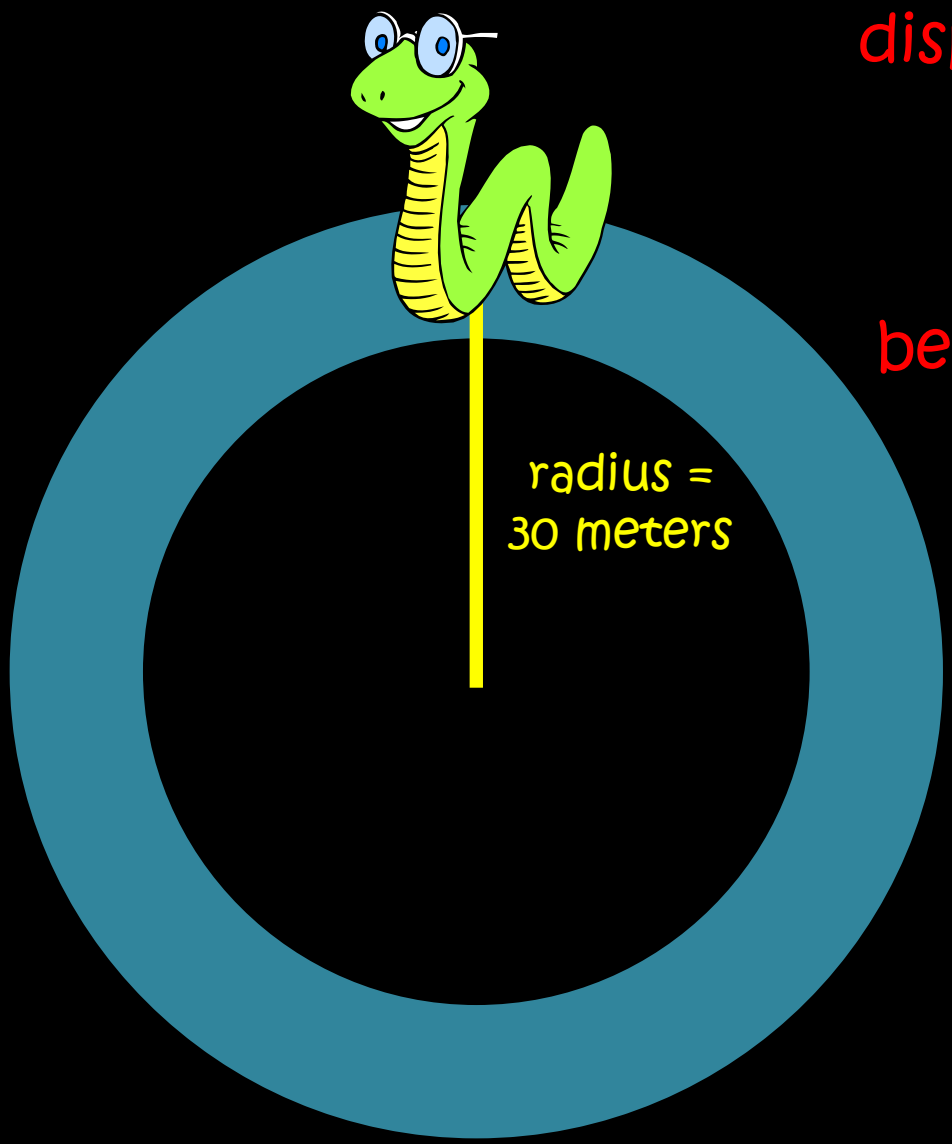
distance = (2) x (π) x (30 m)

distance = 188.50 m

What is the total displacement of the worm as he makes one complete trip around the track? Round your answer to two decimal places.



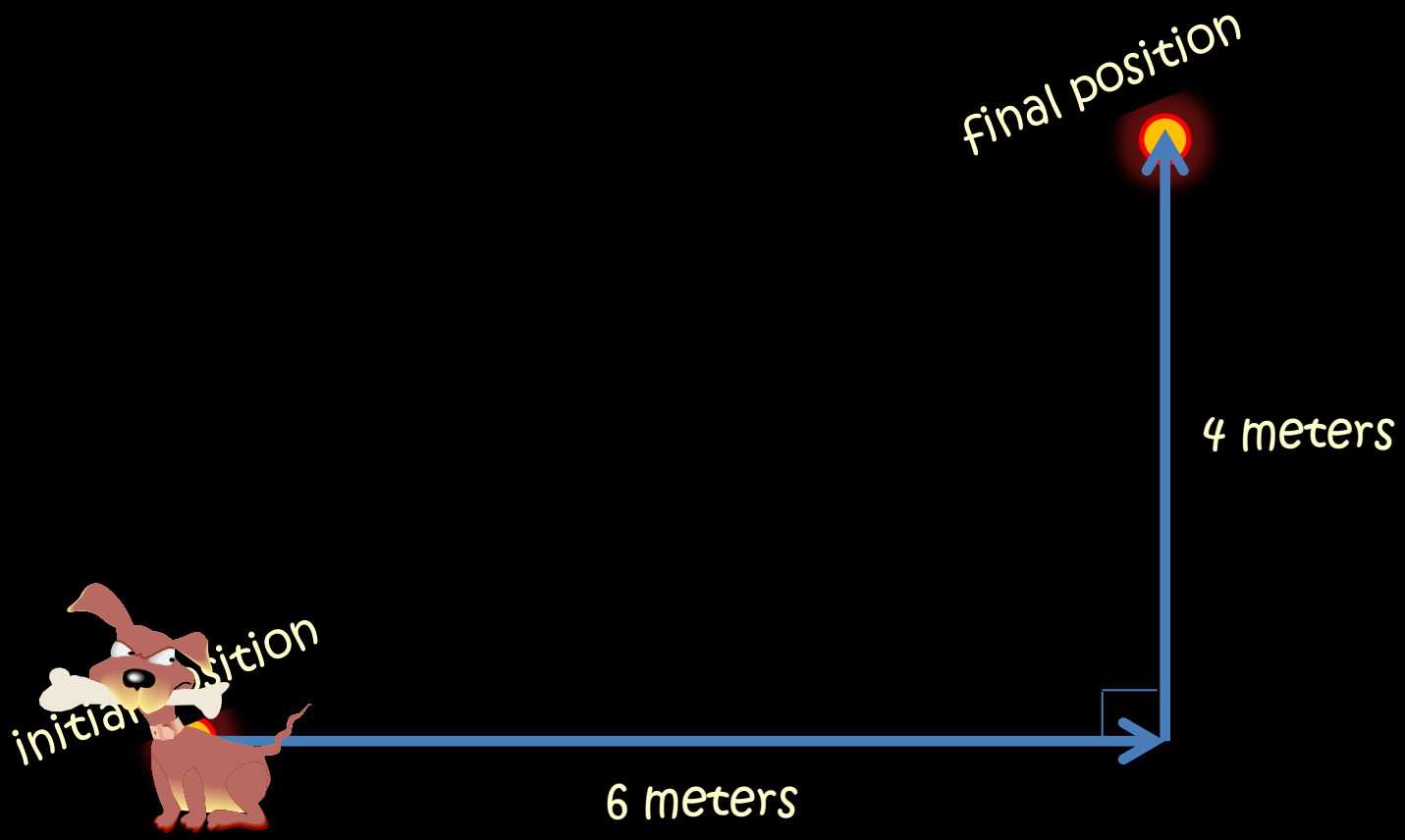
Solution:



displacement = final position – initial position

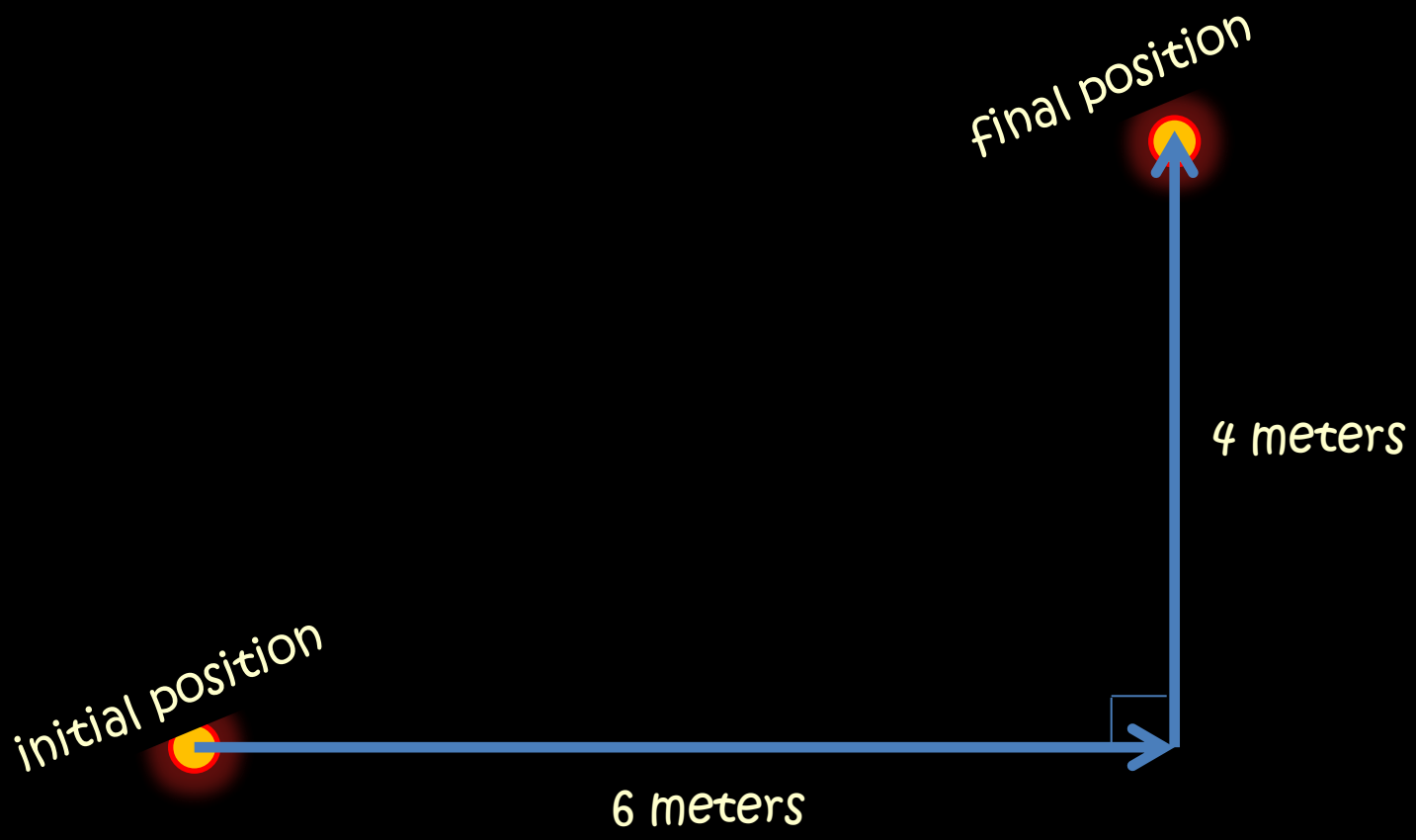
displacement = 0 meters because the worm starts and stops in the same place.

What is the distance traveled by the dog as he moves from his initial position to his final position?

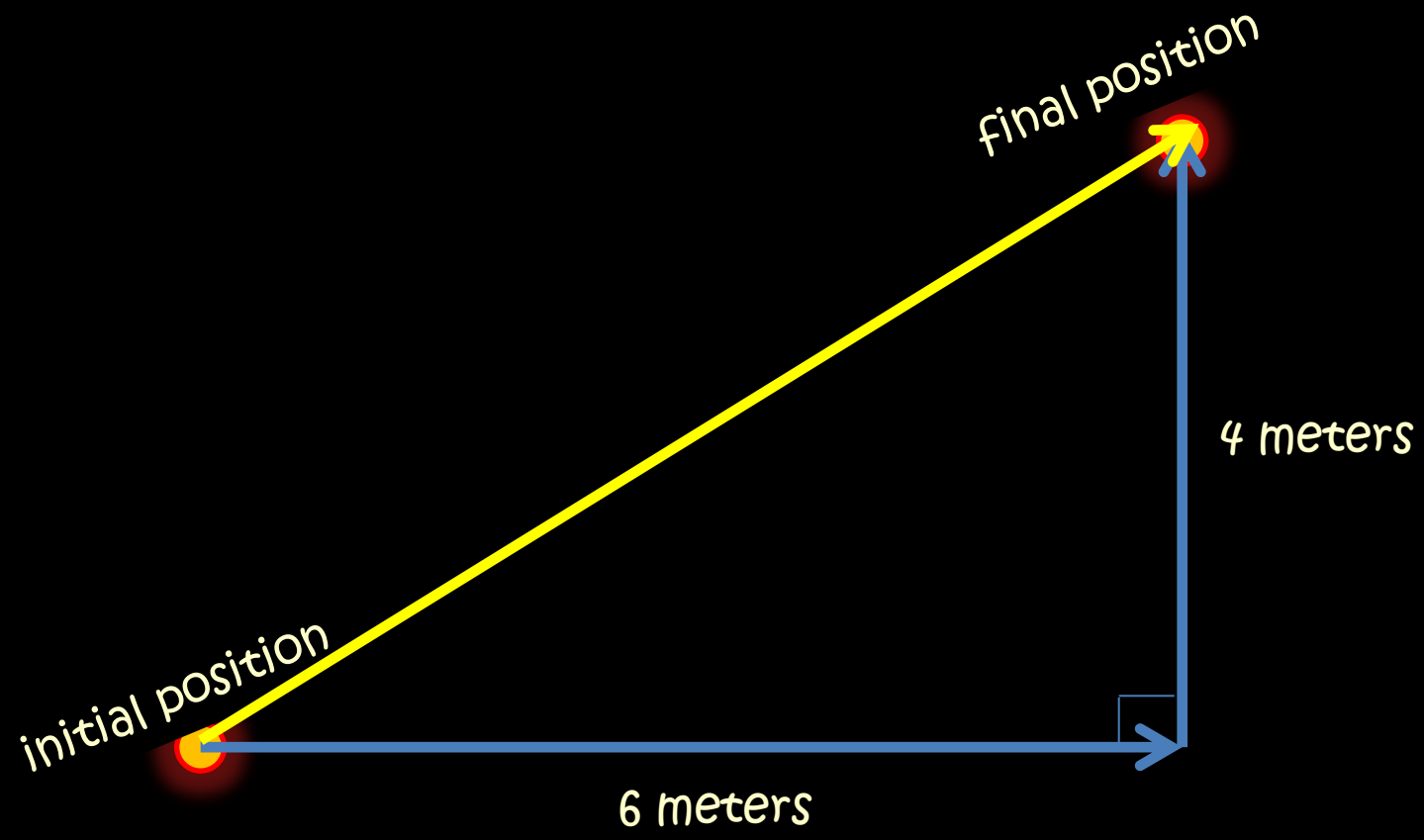


Solution:

$$6\ m + 4\ m = 10\ m$$



What is the displacement of the dog as he moves from his initial position to his final position? Round your answer to two decimal places. ***Hint: the displacement is the yellow arrow shown in the image below.***



$A^2 + B^2 = C^2$

$(6\ m)^2 + (4\ m)^2 = C^2$

$36\ m^2 + 16\ m^2 = C^2$

$52\ m^2 = C^2$

Solution:

$\sqrt{52\ m^2} = C$

$7.21\ m = C$

Displacement is a vector quantity and needs a direction.

7.21 meters up and to the right = displacement