Question #67984, Physics / Mechanics | Relativity | complete

Task:

A mako shark is travelling at 22.3694 mph.

The shark slows down and stops; while stopping it travels 10m.
Find the sharks acceleration.
How much time elapses while the shark is coming to a stop?

Answer:

acceleration is -5 m/s/s
time is 2 seconds.

Solution:

Common moving equations:

Common Equations of Motion (M1.3)

Equations without ***DISPLACEMENT***	$v = u + a\,t$
Equations without ***FINAL VELOCITY***	$s = u\,t + \frac{1}{2}\,a\,t^2$
Equations without ***INITIAL VELOCITY***	$s = v\,t - \frac{1}{2}\,a\,t^2$
Equations without ***TIME***	$v^2 = u^2 + 2as$
Equations without ***ACCELERATION***	$s = \frac{1}{2}\,(u + v)\,t$

For this task:
u = 22.3694 mph = .10m/s
v = 0 mph
s = 10m

From equation 4:
a = -100 / 20 = -5 m/s/s

From eq. 1:
t = 10 / 5 = 2 s