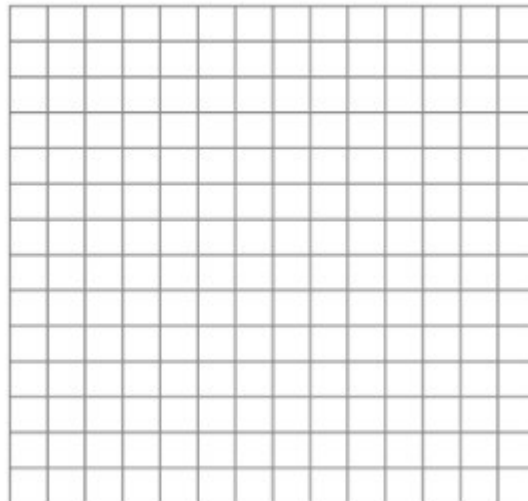# Graphing Distance and Speed Assignment
SPH4C

Leah jogged at a constant velocity of 3 m/s [East] for 1 minute. Calculate her distance travelled after 0 s, 10 s, 20 s, etc.

Δt (s)	$\Delta d = v_{avg}\Delta t$ (m)
0	
10	
20	
30	
40	
50	
60	

Plot the data points in the table above on the grid below with time on the horizontal axis and distance travelled on the vertical axis. Label your axes!

Draw the line through the points. Select two points on your graph and calculate the slope of the line. **Include units in your slope calculation!**
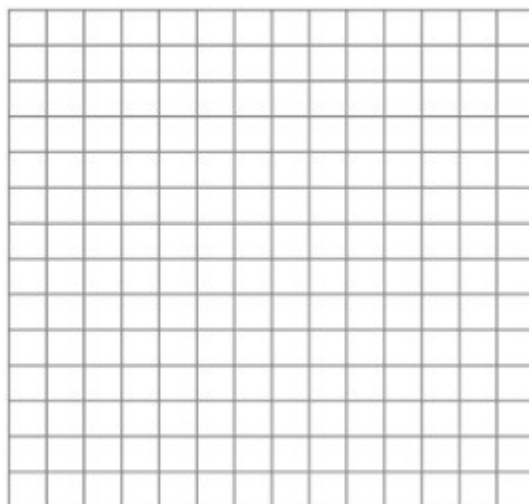
$$slope = \frac{\Delta d}{\Delta t} = \frac{d_2 - d_1}{t_2 - t_1} =$$

The slope of a distance-time graph represents the _____.

Because Leah's speed is constant, her speed at any given instant (her "instantaneous speed") is also 3 m/s.

Δt (s)	v (m/s)
0	3
10	3
20	3
30	3
40	3
50	3
60	3

Plot the data points on the table above on the grid below with time on the horizontal axis and speed on the vertical axis. Label your axes!

Draw the line through the points. Calculate the area under the graph (the area between the line and the horizontal axis) after 60 s. Include units!

Area = base × height = $\Delta t \times v$ =

The area under a speed-time graph represents the _____.

Can you guess what the slope of a speed-time graph represents?
(Hint: it's zero in this case in which the velocity is constant.)