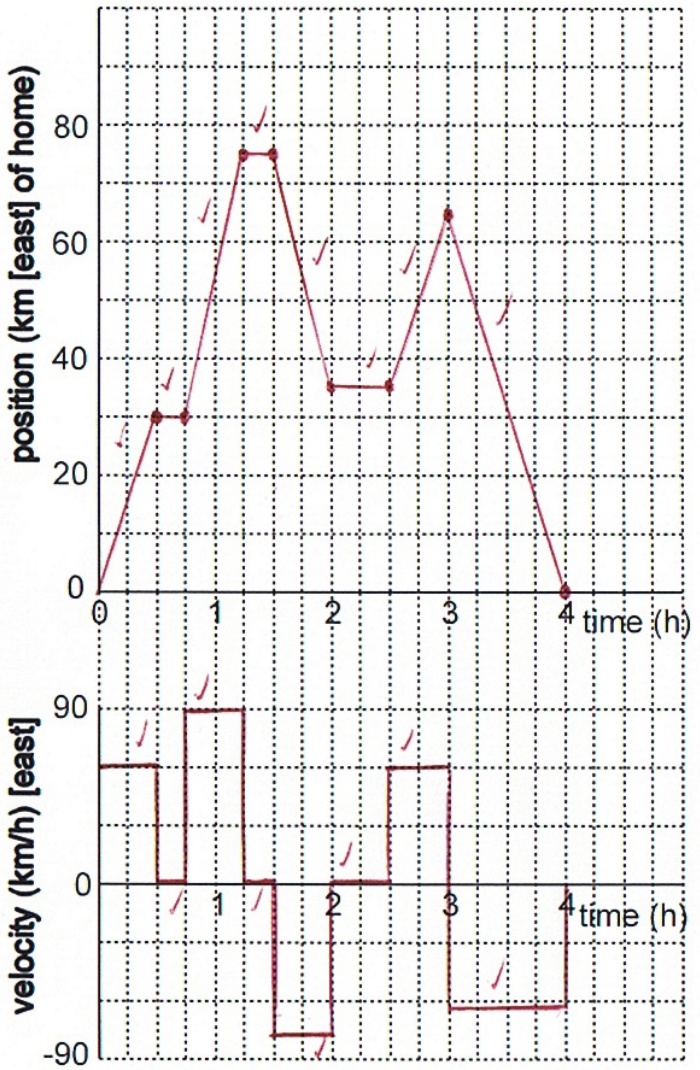
A delivery truck took the following route that has been divided into individual lettered segments A to H. Assume that each segment is covered at uniform velocity and that the road lies along a straight portion of an east-west highway.

(A) East for 1/2 hour at 60 km/h.
(B) Stopped for 15 minutes making a delivery.
(C) East for another 30 minutes at 90 km/h.
(D) Stopped for 15 minutes making a delivery.
(E) West for 40 km at 80 km/h.
(F) Stopped for a 1/2 hour coffee break.
(G) East for 1/2 hour at 60 km/h.
(H) Back directly home in one hour.

1. Use the data to complete the table below. Note: displacement is the change in position for each segments while position is the delivery truck's position with respect to it's starting position (home).

	displacement (km [E])	velocity (km/h [E])	time (hours)	position (km [E] of home)
A	30	60	0.50	30
B	0	0	0.25	30
C	45	90	0.50	75
D	0	0	0.25	75
E	-40	-80	0.50	35
F	0	0	0.50	35
G	30	60	0.50	65
H	-65	-65	1.0	0



2. Plot a position-time graph for the entire journey on the d-t graph given.

3. Plot a velocity-time graph for the entire trip on the v-t graph given.

4. What is the (i) average speed (v_{avg}) and (ii) average velocity ($\vec{v}_{avg}$) for the entire trip?

i) $\Delta d_T = 210\,km$, $\Delta t_T = 4h$ ✓

$v_{avg} = \frac{\Delta d_T}{\Delta t_T} = \frac{210\,km}{4h}$ ✓

$v_{avg} = 52.5\,\frac{km}{h}$ //

ii) $\Delta \vec{d}_T = 0$ ✓, $\Delta t_T = 4h$

$\vec{v}_{avg} = \frac{\Delta \vec{d}_T}{\Delta t}$ ✓

$\vec{v}_{avg} = 0$ //