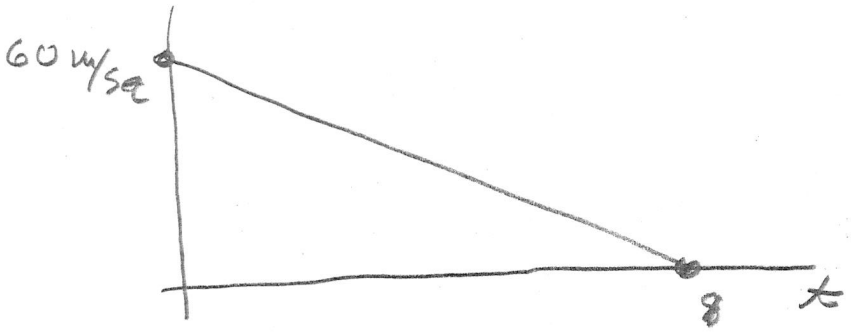
Mathematics 122

Quiz #28 Name: Key

***You must show your work to get full credit.***

A car is moving at 60 meters/second with the driver applies the breaks. If the speed decreases at a constant rate (that is constant negative acceleration) and the car comes to rest after 8 seconds

(1) Graph speed as a function of time form $t = 0$ to $t = 8$.



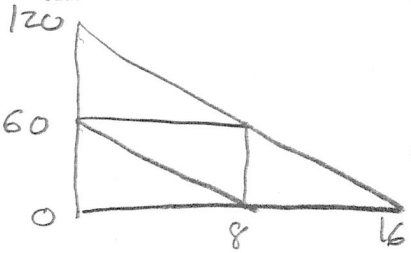

(2) How far did the car travel between the time the brakes were applied to the time that it stopped?

Distance covered = 240 m

Distance covered = Area ( 60 m/sec, 8 sec )

$= \frac{1}{2}(60 \text{ m/sec})(8 \text{ sec}) = 240 \text{ m}$

(3) If the car was moving at 120 meters/second when the brakes we applied and the speed decreases at the same constant speed, how far does travel been the time the brakes were applied to the time it stopped?




Distance covered = 960 m

← From the picture there is 4 times as much area.

So distance $= 4 \cdot 240 = 960$

Or

Distance = Area ( 120, 16 )

$= \frac{1}{2}(120)(16) = 960$