Free fall velocity

This task is about using a formula to create a table, graph and using these to make a prediction.

The formula for the velocity with which an object hits the ground after free falling is

$$v = 10t$$

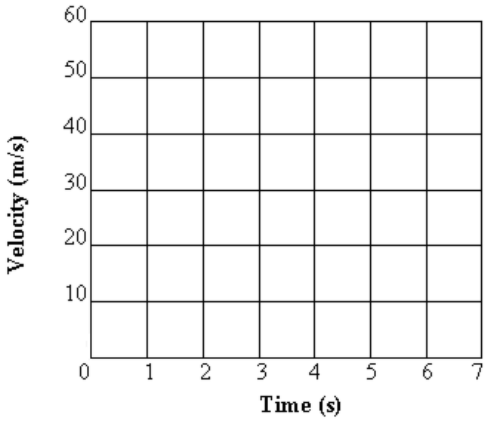
v is the velocity in metres per second (m/s)
t is the free falling time in seconds (s)

a) i) Use the formula to complete the table.

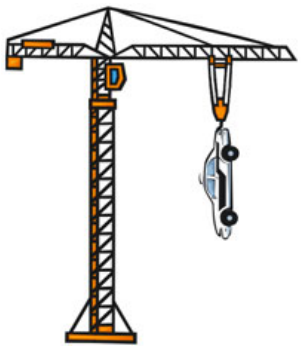
Time of free fall, t	0	1	2	3	4	5	6
Velocity, v	0						

ii) Plot the points in the table above, and join them with a line.

Velocity of falling object



b)



In a car-safety demonstration, cars are dropped vertically from a crane.

Emma counts 3.5 seconds between when a car is released and when it hits the ground.

What is the velocity of the car when it hits the ground? _____ m/s

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