Answer on question #62476, Physics / Other

Question   A stone falls freely under gravity . It covers distance h1,h2,and h3 in the first 5 seconds , the next 5 seconds and next 5 seconds respectively.the relation between h1,h2 and h3 is

Solution   Under the free fall the distance depends on time as

$$h = gt^2/2$$

Hence if in first 5 sec stone passes x meters, in first 10 it will pass 4x and in first 15 it will pass 9x. To find the needed relation all we have to do is to substract distances passes during previous time for 10 and 15 sec:

$$h1/h2/h3 = x/4x - x/9x - (4x - x) - x = 1/3/5$$