

Fall Calculator

How Long Does It Take to Fall?

The formula for calculating fall distance over time is $h = 1/2g(t^2)$. Since we know that g , the acceleration due to gravity, is a constant of 32 ft/sec², then $(1/2g) = 16$. Using 16 in place of $(1/2g)$, the formula becomes $h = 16(t^2)$.

It is now simple to calculate distance or time by replacing either h (fall distance) or t (time) in the formula. For example, a body falls approximately 4 ft (1.2 m) in one half-second. The following table shows other examples of fall distance over time:

Time in seconds	Fall distance in ft (m)
0.5	4 (1.2)
1	16 (4.9)
1.5	36 (11)
2	64 (19.5)
2.5	100 (30.5)
3	144 (43.9)
4	256 (78)
8	1,024 (312)
10	1,600 (487.7)

Keep in mind that the reaction time of the body (the time it takes for the brain to recognize a fall and tell the body to take the appropriate action) is approximately 3/4 of a second.

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