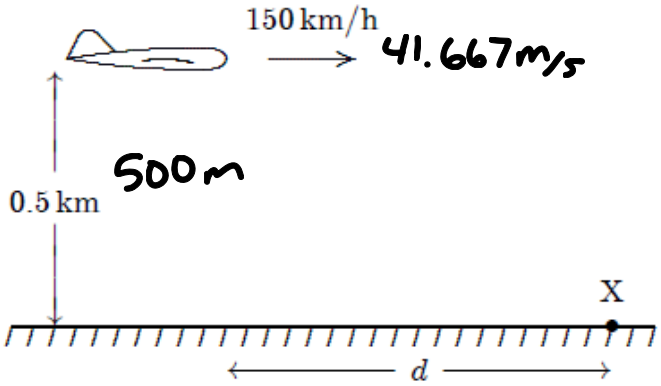
(3) **(10 points)** The airplane shown is in level flight at an altitude of 0.50 km and a speed of 150 km/h. At what distance *d* should it release a heavy bomb to hit the target X? Take g = 10m/s^2 and ignore air resistance. [X=v_{0x}t, Y=v_{0y}t+1/2 (gt^2)]

$Y = V_{0y}t + \frac{1}{2}gt^2$

$t = \sqrt{\frac{2y}{g}}$

$t = \sqrt{\frac{1000}{10}} = \sqrt{100} = 10\,s$



$X = V_{0x}t$

$X = (41.667)(10) = \boxed{416.67\,m}$