# 20-P-KM-AF-018

Curvilinear Motion : Intermediate

Q: The company 'Congo' is an up and coming package shipment company and have gotten international attention for its delivery methods. It works like this, a plane flies A m over the ground at a constant velocity of B km/h. The reciever stands C m away from the plane on the ground and moves towards the package. Ignoring the recievers height, with what velocity must the person move to get to the package before it hits the ground?

A: B km/h

speed = $B^{km/h} / 3.6 = {}^{B}/_{3.6}$ m/s

$s = s_0 + v_0 t + \frac{1}{2} a t^2$

$0 = A + 0 \cdot t + \frac{1}{2} \cdot -9.8 \cdot t^2$

$0 = A - 4.9 t^2$

$t = \sqrt{{}^{A}/_{4.9}}$

distance = ${}^{B}/_{3.6} \cdot \sqrt{{}^{A}/_{4.9}}$

distance to cross = C - distance

velocity need = $\frac{d+c}{t}$ (m/s)