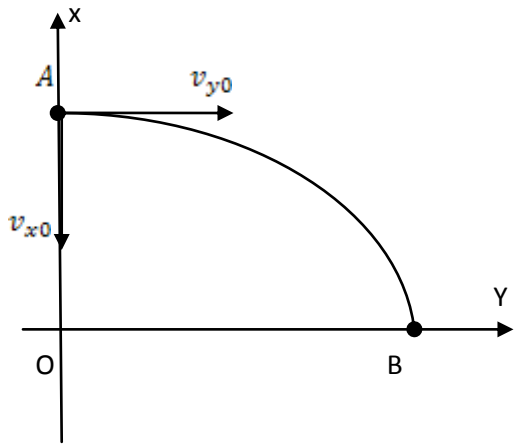
A rescue plane wants to drop supplies to isolated mountain climbers on a rocky ridge 235m below?
Part (a) asks:
If the plane is traveling horizontally with a speed of 61.1m/s, how far in advance of the recipients (horizontal distance) must the goods be dropped?
I got 423m, which is the correct answer.

Part (b) asks:
Suppose, instead, that the plane releases the supplies a horizontal distance of 425m in advance of the mountain climbers. What vertical velocity (up or down) should the supplies be given so that they arrive precisely at the climbers' position?



The goods moves along the parabola from A to B

The equations of the motion is

$$\begin{cases} y = v_{y0}t \\ x = x_0 - v_{x0}t - \dfrac{gt^2}{2} \end{cases}$$

(a) v_{y0} =61.1m/s

$x_0 = 235$ m

$v_{x0} = 0$

$g = 9.8\ m/s^2$

$x = 0$

$$\begin{cases} y = 61.1t \\ 0 = 235 - \dfrac{9.8t^2}{2} \end{cases}$$

From the second

$t = \sqrt{\frac{2\times235}{9.8}} = 6.92\,s$, so

$y = 61.1 \times 6.92 = 423$ m

(b) v_{y0} =61.1m/s

$x_0 = 235$ m

$g = 9.8\,m/s^2$

$x = 0$

y = 425 m

$$\begin{cases} 425 = 61.1t \\ 0 = 235 - v_{x0}t - \frac{9.8t^2}{2} \end{cases}$$

From the first

$$t = \frac{425}{61.1} = 6.96$$

From the second

$$v_{x0} = \frac{235 - \frac{9.8 \times 6.96^2}{2}}{6.96} = -0.34\,m/s$$

Answer: The vertical velocity up 0.34 m/s.