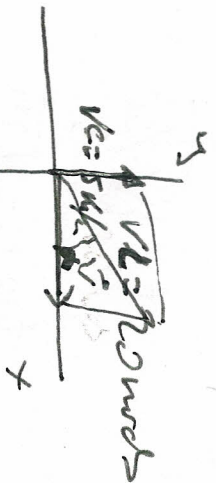


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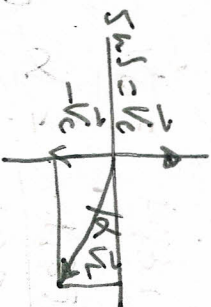


20 m/s = 1852 m/s · 20 m/s = 10,3 m/s
 Sd/s: 1,39 m/s

$\vec{V} = \vec{V}_c + \vec{V} = 10,3\hat{i} + 1,39\hat{j}$ m/s

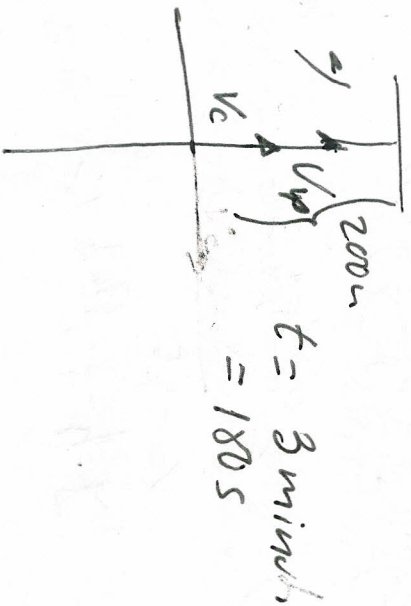
$V = \sqrt{10,3^2 + 1,39^2} = 10,39$ m/s
 $\alpha = \arctan \frac{1,39}{10,3} = 7,6^\circ$

b) For minimum time as t

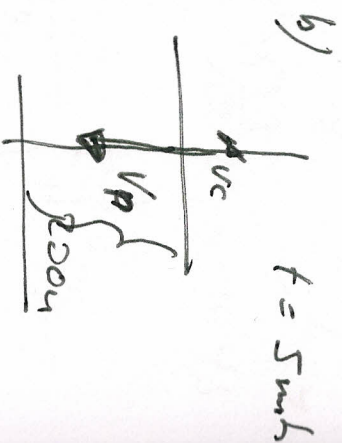


$\sin \alpha = \frac{-V_c}{V} = \frac{-1,39}{10,3} = 0,134$
 $\alpha = -7,8^\circ$

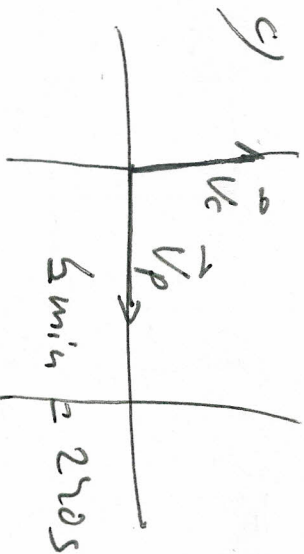
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$t = 3$ min, $t = 180$ s



$t = 5$ min



$t = 220$ s

a) t_3 needs to sum

$(V_p + V_c) \cdot 180s = 200m$
 $(V_p - V_c) \cdot 300s = 200m$

$$v_p + v_c = \frac{200}{180}$$

$$v_p - v_c = \frac{200}{300}$$

Sunda

$$2v_p = \frac{200}{180} + \frac{200}{300} =$$

$$v_p = 0,89 \text{ m/s}$$

$$v_c = v_p - \frac{200}{180} = v_p - 0,222 \text{ m/s}$$



Weg der drehung

$$s = v \cdot t = 0,89 \text{ m/s} \cdot 240 \text{ s} = 213,6 \text{ m}$$

\vec{v}_c \vec{v}_p

$$\tan \alpha = \frac{0,22}{0,89 \text{ m/s}} \Rightarrow \alpha = \arctan \frac{0,22}{0,89} = 13,9^\circ$$

$$t = \frac{213,6 \text{ m}}{v_x} = \frac{213,6 \text{ m}}{0,89 \cdot \cos 13,9^\circ \text{ m/s}} = 247 \text{ s} = 4,12 \text{ min}$$