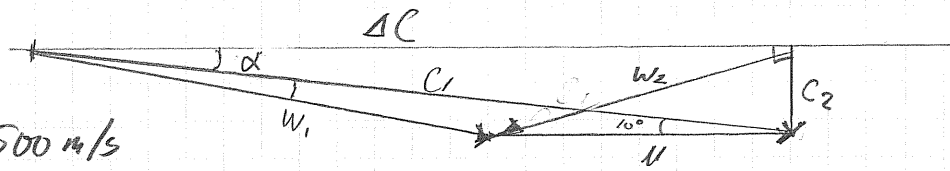


11



$$c_1 = 500 \text{ m/s}$$

$$u = 200 \text{ m/s}$$

11.1 $w_1 = \sqrt{c^2 + u^2 - 2 \cdot c \cdot u \cdot \cos(\alpha)}$

$$w_1 = \sqrt{500^2 + 200^2 - 2 \cdot 500 \cdot 200 \cdot \cos(10)} = \underline{\underline{305 \text{ m/s}}}$$

11.2 $w_2 = \sqrt{u^2 + c_2^2} = \sqrt{200^2 + 86,8^2} = \underline{\underline{218 \text{ m/s}}}$

11.3 $c_2 = c_1 \cdot \sin \alpha = 500 \cdot \sin 10 = \underline{\underline{86,8 \text{ m/s}}}$

11.4 $F = m \cdot \Delta \vec{c}$

$$\Delta \vec{c} = c_1 \cdot \cos \alpha = 500 \cdot \cos 10 = 492,4 \text{ m/s}$$

$$F = \frac{900}{3600} \cdot 492,4 = \underline{\underline{123,1 \text{ N}}}$$

11.5 $P_i = F \cdot u = 123,1 \cdot 200 \cdot 10^{-3} = \underline{\underline{24,62 \text{ kW}}}$

Kraft og Effekt

$$F = m \cdot \Delta \vec{c} \text{ [N]} \quad \Delta \vec{c} = \vec{c}_1 - \vec{c}_2$$

$$\text{N} \left[\frac{\text{kg} \cdot \text{m}}{\text{s} \cdot \text{s}} = \frac{\text{kg} \cdot \text{m}}{\text{s}^2} \right] = \left[\frac{\text{kg}}{\text{s}} \cdot \frac{\text{m}}{\text{s}} \right]$$

$$P = F \cdot u = \left[\text{N} \cdot \frac{\text{m}}{\text{s}} \right] = \left[\frac{\text{J}}{\text{s}} \right] = \text{W}$$