

Παράδειγμα σελ. 128

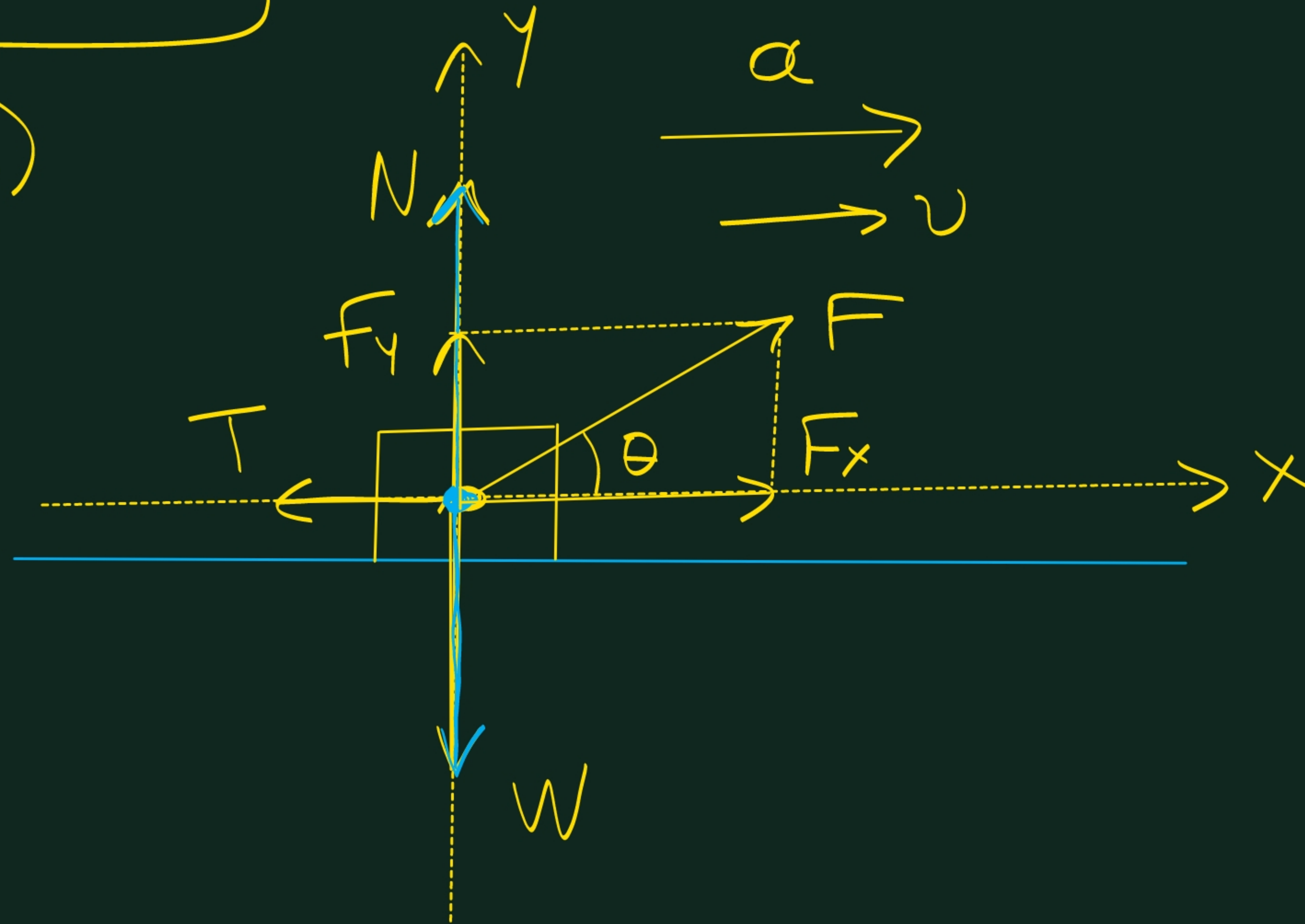
$m = 10 \text{ kg}$ α)

$F = 80 \text{ N}$

$\theta = 30^\circ$

$\gamma = 0,25$

$g = 10 \text{ m/s}^2$



$$T = \gamma N \Rightarrow T = 0,25 \cdot 60 \Rightarrow$$

$$T = 15 \text{ N}$$

$$T = \gamma N$$

$$\Sigma F_y = N + F_y - W = 0 \Rightarrow$$

$$N + F \cdot \sin \theta - mg = 0 \Rightarrow$$

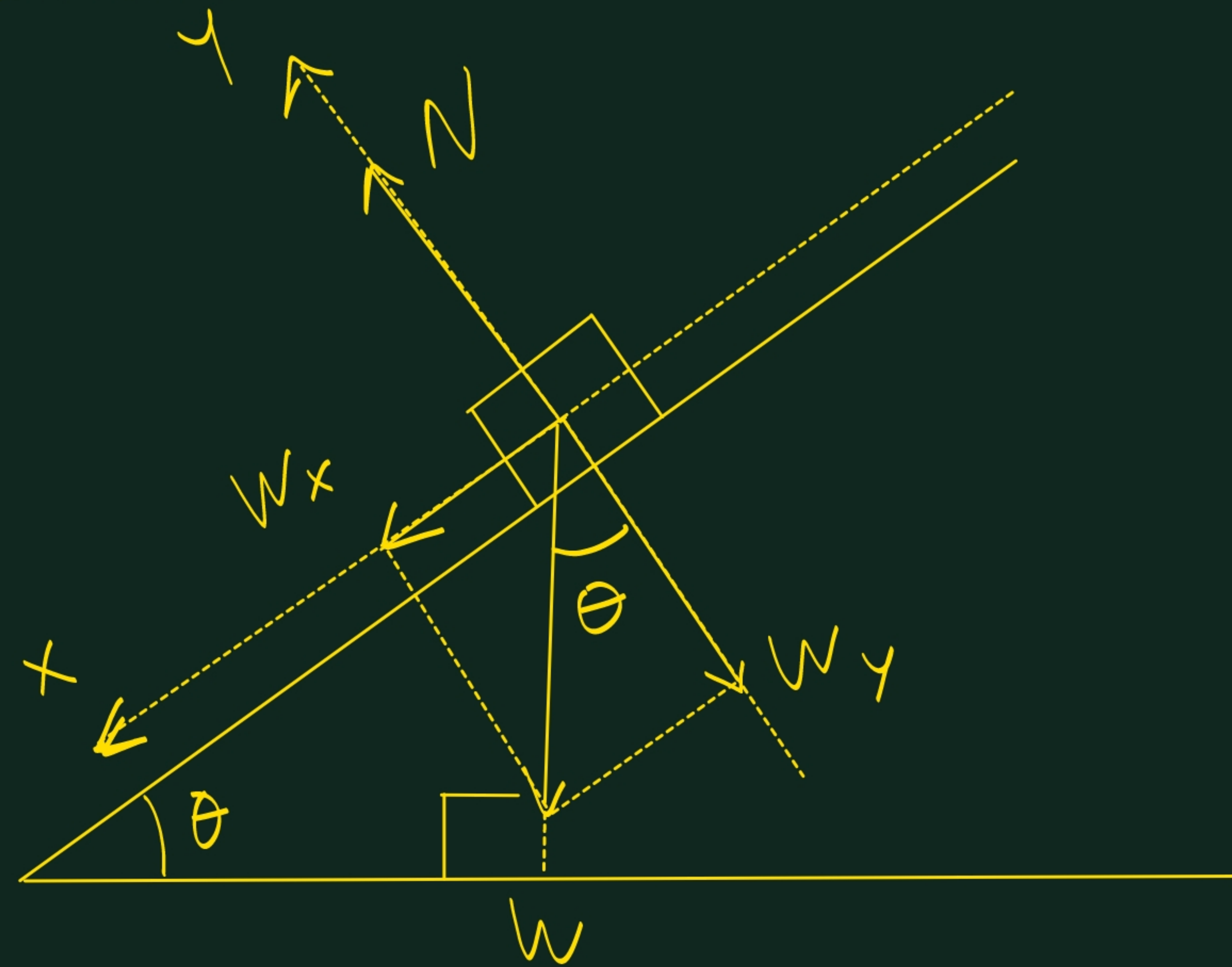
$$N = mg - F \cdot \sin \theta \Rightarrow$$

$$N = 10 \cdot 10 - 80 \cdot \sin 30^\circ \Rightarrow$$

$$N = 100 - 80 \cdot \frac{1}{2} \Rightarrow$$

$$N = 100 - 40 \Rightarrow N = 60 \text{ N}$$

Ex. 7 2.137)



$$b) \Sigma F_x = ma \Rightarrow$$

$$F_x - T = ma \Rightarrow$$

$$F \cdot \cos \theta - T = ma \Rightarrow$$

$$80 \cdot \cos 60^\circ - 15 = 10a \Rightarrow$$

$$80 \cdot \frac{\sqrt{3}}{2} - 15 = 10a \Rightarrow$$

$$40\sqrt{3} - 15 = ma \Rightarrow$$

$$40 \cdot 1,7 - 15 = ma \Rightarrow$$

$$68 - 15 = 10a \Rightarrow 53 = 10a \Rightarrow a = 5,3 \text{ m/s}^2$$

$$g) S = \frac{1}{2} at^2 \Rightarrow$$

$$S = \frac{1}{2} \cdot 5,3 \cdot 4^2 \Rightarrow$$

$$S = \frac{1}{2} \cdot 5,3 \cdot 16 \Rightarrow$$

$$S = 8 \cdot 5,3 \Rightarrow S = 42,4 \text{ m}$$