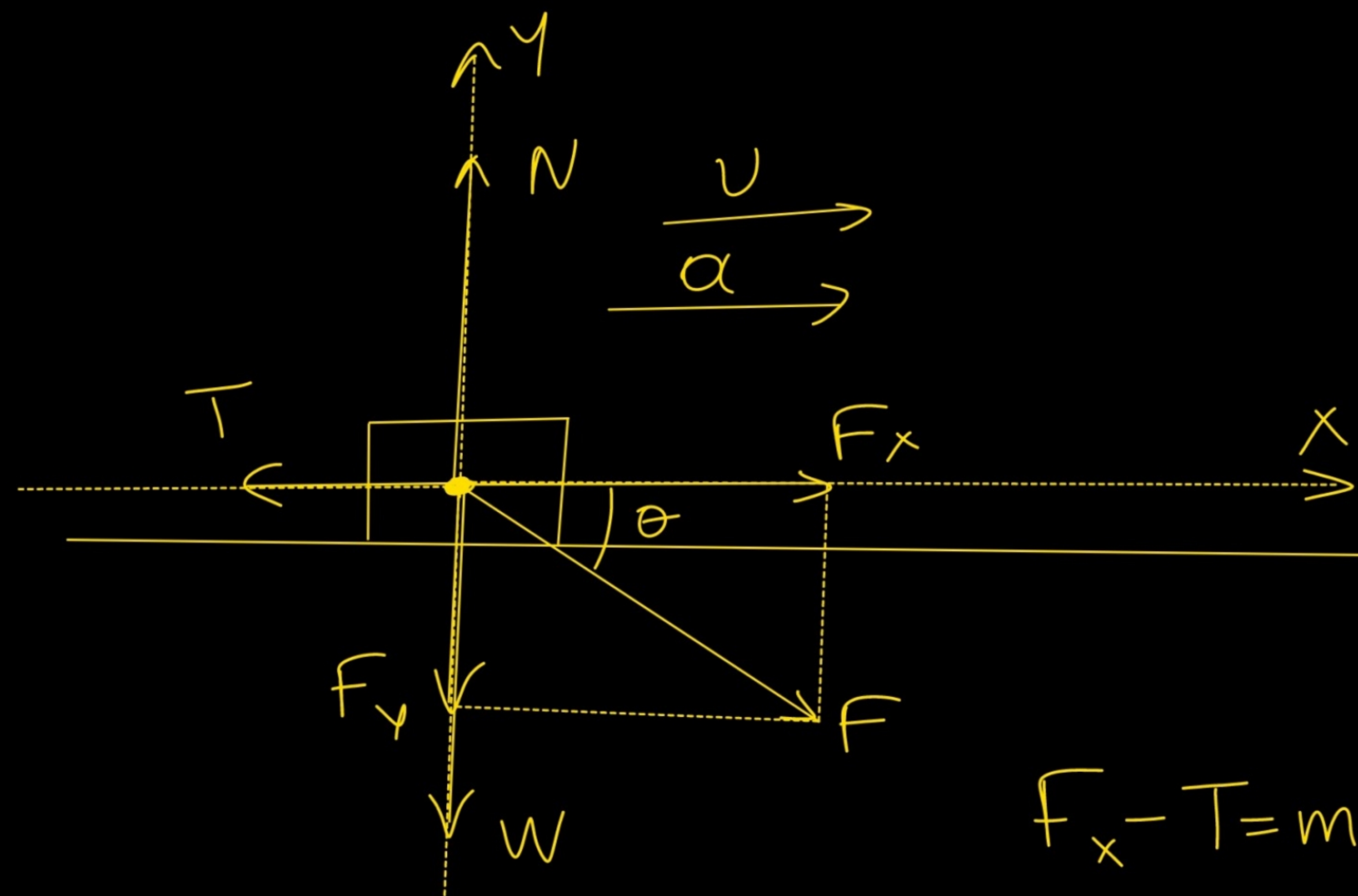




$$\sum F_y = 0 \Rightarrow N - F_y - W = 0 \Rightarrow$$

$$N - F \cdot \cos \theta - m \cdot g = 0 \Rightarrow$$

$$N = mg + F \cdot \cos \theta$$

$$\sum F_x = m \cdot a \Rightarrow F_x - T = m \cdot a$$

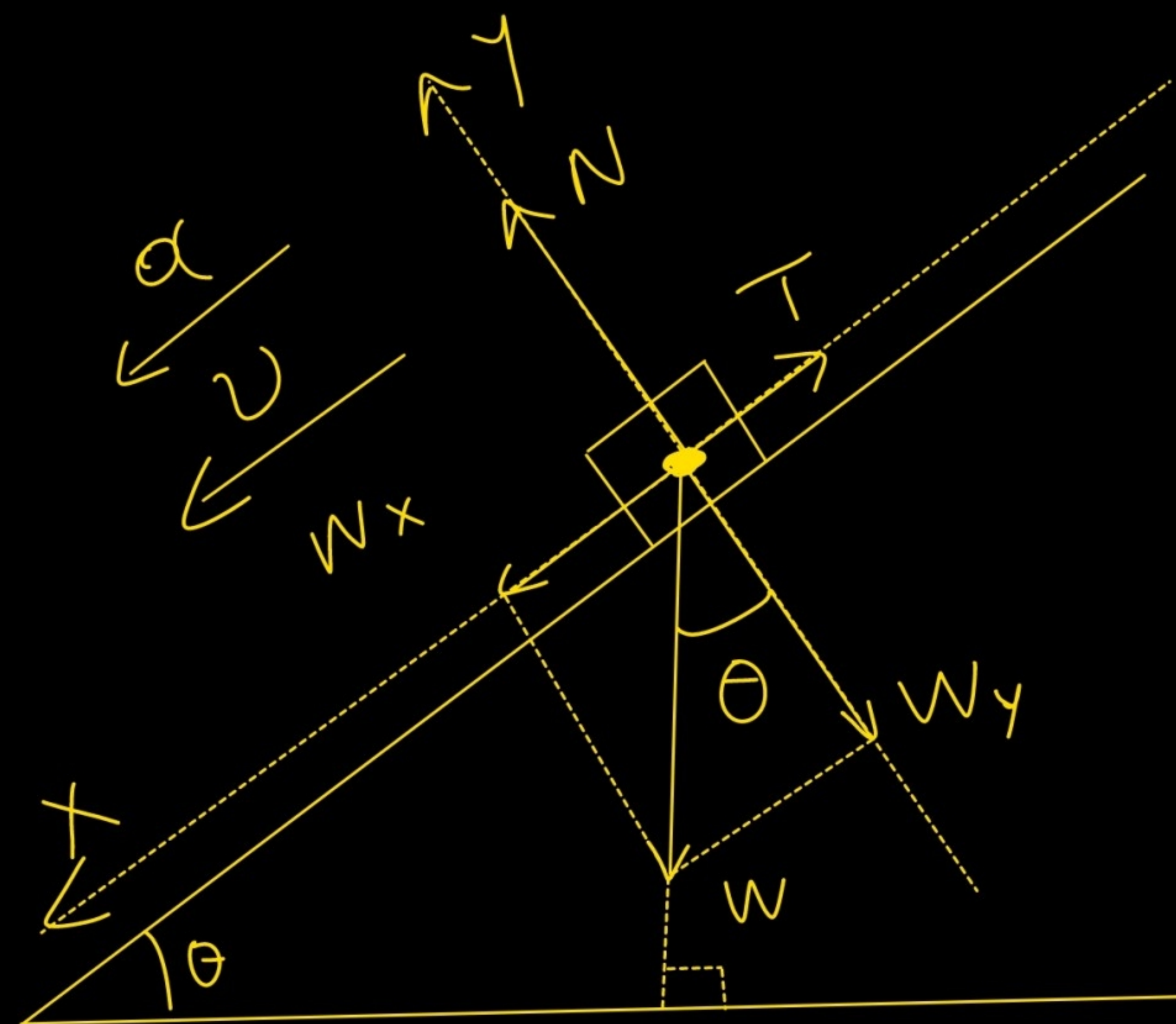
$$T = \mu N = \mu (mg + F \cdot \cos \theta)$$

$$F_x - T = m \cdot a \Rightarrow F \cdot \sin \theta - \mu (mg + F \cdot \cos \theta) = m \cdot a \Rightarrow$$

$$F \cdot \sin \theta - \mu mg - \mu F \cdot \cos \theta = m \cdot a \Rightarrow$$

$$F \cdot (\sin \theta - \mu \cdot \cos \theta) - \mu mg = m \cdot a \Rightarrow a = \dots$$

Αδ. 13 βελ. 158.)



$$\Gamma. s = \frac{1}{2} \cdot a \cdot t^2$$

$$\Sigma F_x = m \cdot a \Rightarrow W_x - T = m \cdot a \Rightarrow$$

$$m \cdot g \cdot \sin \theta - T = m \cdot a \Rightarrow 1 \cdot 10 \cdot \sin 30^\circ - 2,5 = 1 \cdot a \Rightarrow 10 \cdot \frac{1}{2} - 2,5 = 1 \cdot a \Rightarrow 5 - 2,5 = 1 \cdot a \Rightarrow$$

$$a = 2,5 \text{ m/s}^2$$

A. Το σώμα δέχεται τρεις δυνάμεις:

- 1) Το βάρος $W = m \cdot g$ από τη Γη.
- 2) Την κάθετη δύναμη N από το κεκλιμένο επίπεδο.
- 3) Την τριβή T από το κεκλιμένο επίπεδο.

$$B. \Sigma F_y = 0 \Rightarrow N - W_y = 0 \Rightarrow N - W \cdot \cos \theta = 0 \Rightarrow$$

$$N = m \cdot g \cdot \cos \theta \Rightarrow N = 1 \cdot 10 \cdot \cos 30^\circ \Rightarrow$$

$$N = 10 \cdot \frac{\sqrt{3}}{2} \Rightarrow N = 5 \cdot \sqrt{3} \text{ N}$$

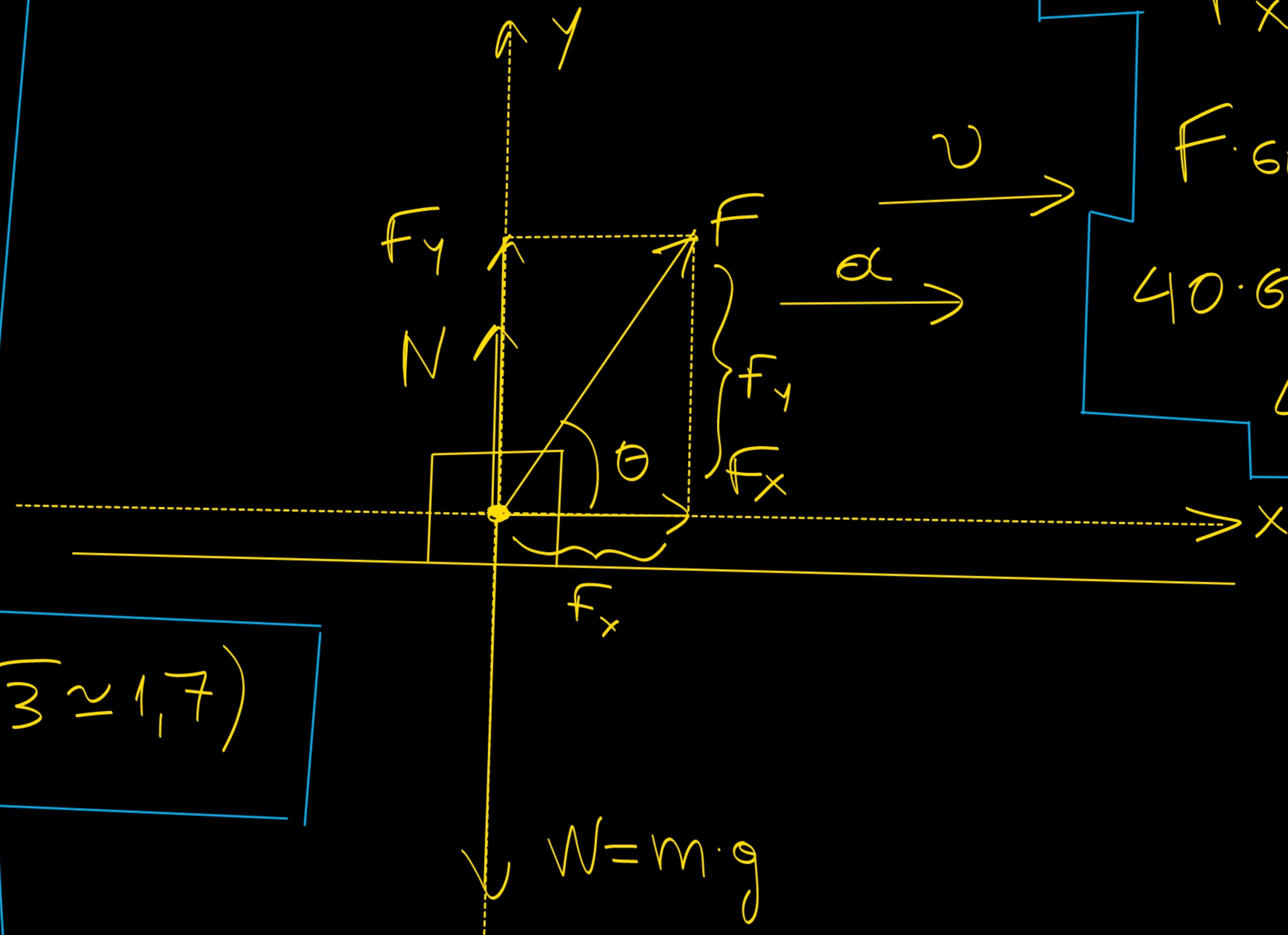
$$T = \mu N = \frac{\sqrt{3}}{6} \cdot 5 \cdot \sqrt{3} = \frac{5 \cdot 3}{6} = \frac{15}{6} \Rightarrow T = 2,5 \text{ N}$$

$$S = \frac{1}{2} \cdot a \cdot t^2 \Rightarrow$$

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

$$S = 1,25 \text{ m}$$

A. u. 22 622. 199.



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

$$N = W - F_y \Rightarrow$$

$$N = m \cdot g - F \cdot \sin \theta \Rightarrow$$

$$N = 10 \cdot 10 - 40 \cdot \sin 60^\circ \Rightarrow$$

$$N = 100 - 40 \cdot \frac{\sqrt{3}}{2} \Rightarrow N = 100 - 20\sqrt{3} \approx 100 - 20 \cdot 1,7 =$$

$$= 100 - 34 \Rightarrow N \approx 66 \text{ N}$$

$$B. \Sigma F_x = m \cdot a \Rightarrow$$

$$F_x = m \cdot a \Rightarrow$$

$$F \cdot \cos \theta = m \cdot a \Rightarrow$$

$$40 \cdot \cos 60^\circ = 10 \cdot a \Rightarrow$$

$$40 \cdot \frac{1}{2} = 10 \cdot a \Rightarrow$$

$$\frac{20}{10} = \frac{10 \cdot a}{10} \Rightarrow$$

$$a = 2 \text{ m/s}^2$$

✓.

$$0 \xrightarrow{1^0} 1 \xrightarrow{2^0} 2 \xrightarrow{3^0} 3 \xrightarrow{4^0} 4 \xrightarrow{5^0} 5$$

$$S(t) = \frac{1}{2} a \cdot t^2$$

$$S(5) = \frac{1}{2} \cdot 2 \cdot 5^2 = 25 \text{ m}$$

$$S(4) = \frac{1}{2} \cdot 2 \cdot 4^2 = 16 \text{ m}$$

Apα: $S = S(5) - S(4) = 25 - 16 = 9$

$$S = 9 \text{ m}$$