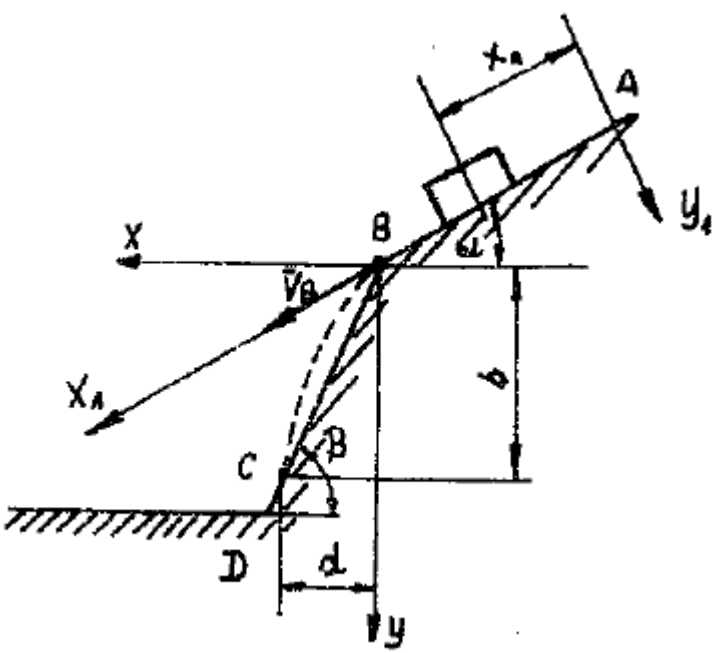
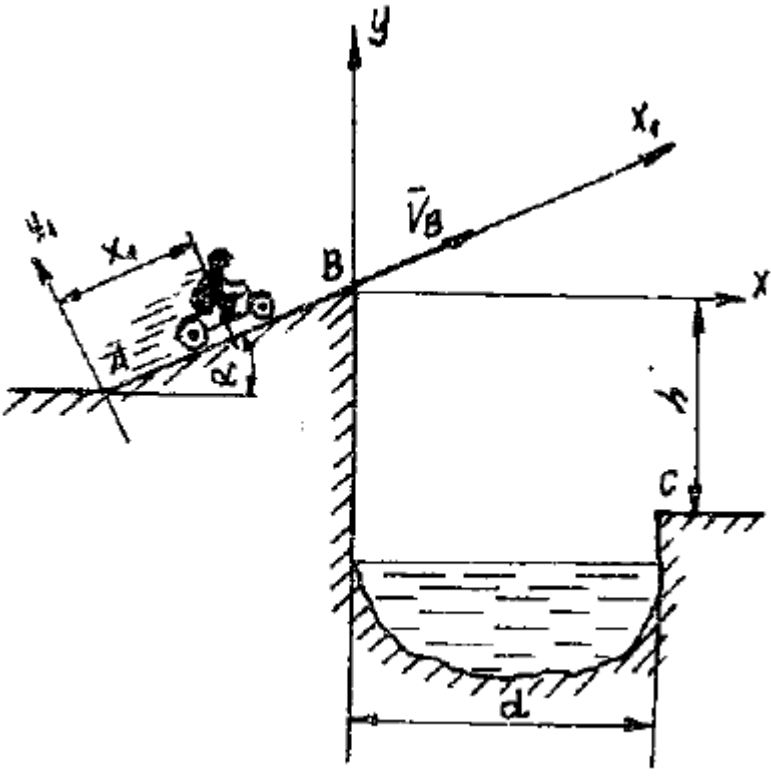


Dynamics of the material point



The body moves from point A on the segment $AB = l$ of the plane inclined to the horizontal at the angle α in time t with the velocity V_A and the friction coefficient μ . At point B, the body leaves the plane with velocity V_B and falls with velocity V_C at point C onto the plane BD, inclined horizontally at an angle β at time T . Determine t and b , neglect air resistance.

$\alpha = 30^\circ$
 $V_A = 0 \frac{m}{s}$
 $\mu = 0,2$
 $AB = l = 10m$
 $\beta = 60^\circ$
 $d = 2m$



Having the speed V_A at point A, the motorcycle moves t seconds along the segment $AB = l$, which forms the angle α with the horizontal. Constant force P cause the movement along the entire segment AB. The motorcycle at point B reaches speed V_B and passes through a ditch width d , being in the air for T seconds and lands at C with velocity V_C . The weight of the motorcycle is m . Determine V_A and d , neglect air resistance.

$\alpha = 30^\circ$
 $V_B = 4,5 \frac{m}{s}$
 $h = 1,5m$
 $AB = l = 40m$
 $P = 0kN$