## Usando CIR

F16-13. Determine the angular velocity of the rod and the velocity of point C at the instant shown.
Rta: $2 \mathrm{rad} / \mathrm{s} ; 5 \mathrm{~m} / \mathrm{s}$ a $323,1^{\circ}$


F16-14. Determine the angular velocity of link BC and velocity of the piston $C$ at the instant shown. Rta: $6 \mathrm{rad} / \mathrm{s} ; 0 \mathrm{~m} / \mathrm{s}$;


F16-15. If the center O of the wheel is moving with a speed of $v o=6 \mathrm{~m} / \mathrm{s}$, determine the velocity of point A on the wheel. The gear rack $B$ is fixed.
Rta: $13,4 \mathrm{~m} / \mathrm{s}$ a $63,4^{\circ}$.
F16-16. If cable $A B$ is unwound with a speed of $3 \mathrm{~m} / \mathrm{s}$, and the gear rack C has a speed of 1.5 $\mathrm{m} / \mathrm{s}$, determine the angular velocity of the gear and the velocity of its center O .
Rta: $9 \mathrm{rad} / \mathrm{s} ; 1,2 \mathrm{~m} / \mathrm{s}$.

F16-17. Determine the angular velocity of link BC and the velocity of the piston C at the instant shown.
Rta: $0,866 \mathrm{rad} / \mathrm{s} ; 1,39 \mathrm{~m} / \mathrm{s}$

Fl6-18. Determine the angular velocity of links $B C$ and $C D$ at the instant shown.

Rta: 4,33 rad/s; $5 \mathrm{rad} / \mathrm{s}$.


