Magnetic Force Application (2)

A metal wire of mass $m = 1.5$kg slides without friction on two horizontal rails spaced a distance $d = 3$m apart.

The track lies in a vertical uniform magnetic field of magnitude $B = 24$mT pointing out of the plane.

A constant current $I = 12$A flows from a battery along one rail, across the wire, and back down the other rail. The wire starts moving from rest at $t = 0$.

- Find the direction and magnitude of the velocity of the wire at time $t = 5$s.