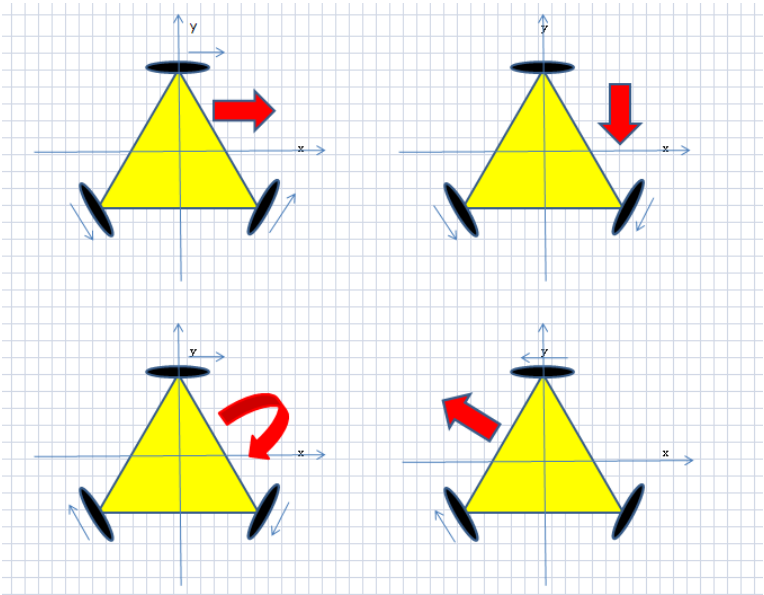
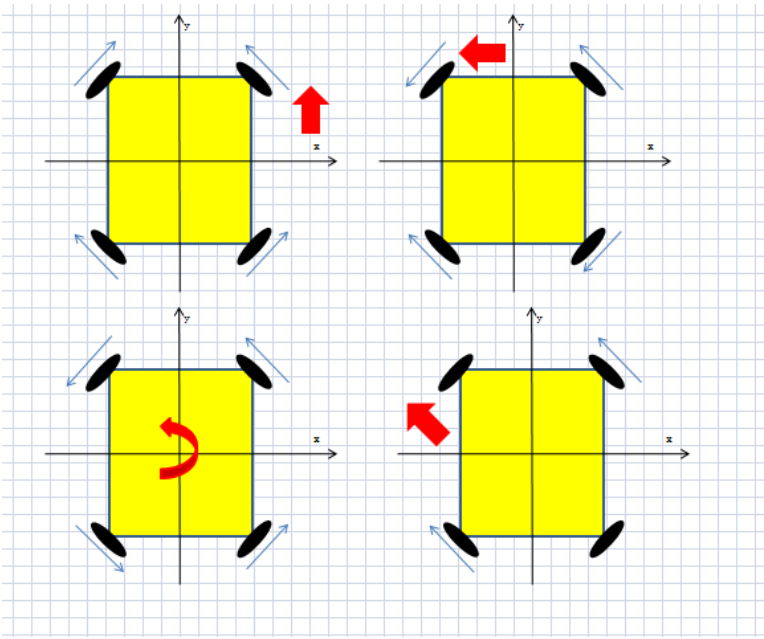
Brief introduction of Omni-wheel

Omni-directional wheels are unique as they are able to roll freely in two directions .It can ether roll like a normal wheel or roll laterally using the wheels along its circumference.Omni-direction wheels allow a robot to convert from a non-holonomic to a holonomic robot.A non-holonomic robot that uses normal wheels has only 2 out of 3 controllable degrees-of-freedom which are,moving forward/backwards and rotation.Not being able to move side ways makes a robot slower and less efficient in reaching its given goal. The holonomic omni-directional wheels are able to overcome this problem,as it it a highly maneuverable.Unlike normal non-holonomic robot,the holonomic omni-directional robot can move in an arbitrary direction continuously without changing the direction of the wheels.It can move back and forth,slidewaysmand rotates at the same position.

Working principle of 3 Wheels Omni-wheel robot



Working principle of 4 wheels Omni-wheel robot



Nexus Robot Omni-wheels

Nexus Robot robot kit using omni-wheels