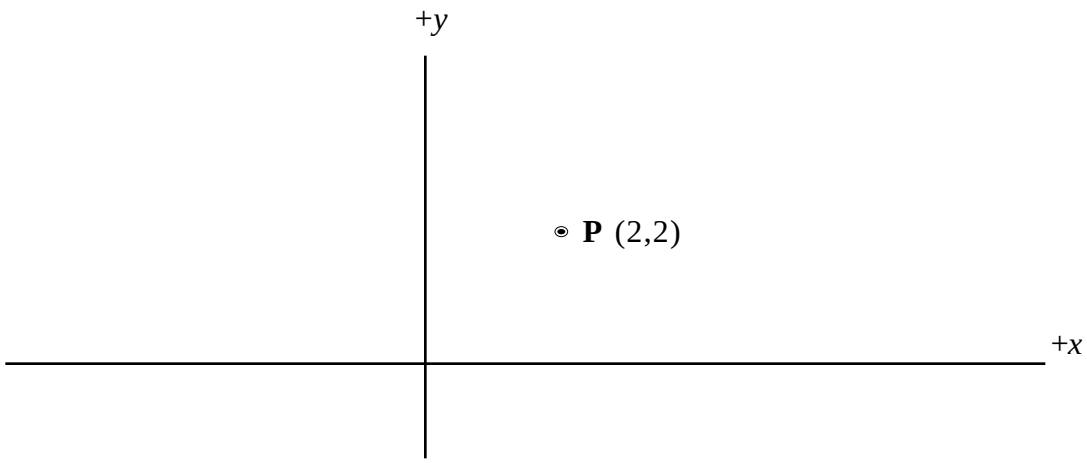
Moving Charges in Uniform Magnetic Field—Acceleration[182]

Moving charged particles are released with a velocity (details listed below) at the point P (2 m, 2 m) in a large region of space which has a uniform magnetic field in the *+x* direction. All these particles have the same mass, and they are released individually into this field.

Rank from greatest to least the magnitude of the initial acceleration of these charged particles as they are released from P.

Case	Charge	Speed	Direction
A	5 mC	3 m/s	*+x*
B	5 mC	3 m/s	*-x*
C	5 mC	3 m/s	*+y*
D	5 mC	3 m/s	*-y*
E	-10 mC	3 m/s	*+y*
F	+10 mC	3 m/s	*-y*
G	-10 mC	5 m/s	*+y*
H	+10 mC	5 m/s	*-y*



Greatest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____ 8 _____ Least

Or, the magnitude of the initial acceleration will be the same for all of these (but not zero). ___

Or, the magnitude of the initial acceleration will be zero for all of these. ____

Please carefully explain your reasoning.

How sure were you of your ranking? (circle one)

Basically Guessed				Sure				Very Sure	
1	2	3	4	5	6	7	8	9	10

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