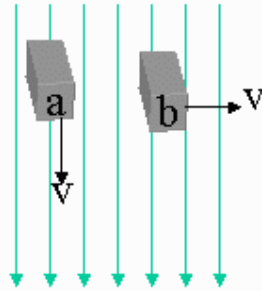


Checkpoint 1

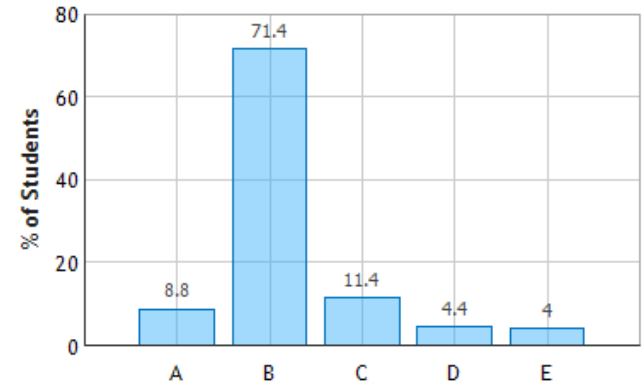


Two identical conducting bars (shown in end view) are moving through a vertical magnetic field. Bar (a) is moving vertically and bar (b) is moving horizontally.



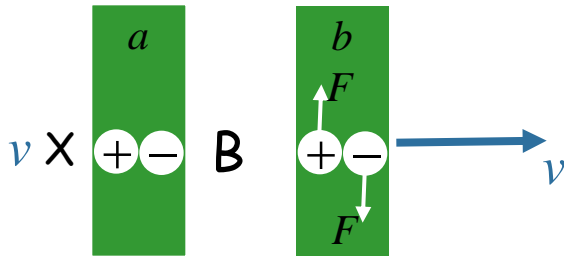
Which of the following is true?

- A. A motional emf exists in the bar for case (a), but not (b)
- B. A motional emf exists in the bar for case (b), but not (a)**
- C. A motional emf exists in the bar for both cases (a) and (b)
- D. A motional emf exists in the bar for neither case (a) nor case (b)



Rotate picture by 90°

X X X X X X X X X



X X X X X X X X X

$$F_a = 0 \quad F_b = qvB$$

Bar *a*

No force on charges
No charge separation
No E field
No emf

Bar *b*

Opposite forces on charges
Charge separation
 $E = vB$
 $emf = EL = vBL$