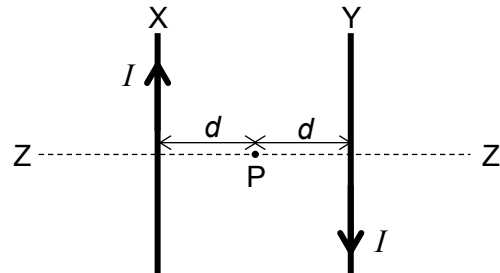




24

Two infinitely long straight conductors X and Y are placed parallel to each other. Each conductor carries a current  $I$ . Point P is equidistant from either conductor.

X is fixed while Y is rotated about the axis ZZ' until it is perpendicular to X and its current is out of the plane of the paper.



Which of the following statements describing what happens during the rotation is incorrect?

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A

X experiences a force to the left that decreases to zero.

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**B**

The forces on X and Y are always equal in magnitude and opposite in direction.

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**C**

The resultant magnetic flux density at P decreases to a value that is  $\sqrt{2}$  times the flux density due to each wire at P.

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**D**

The resultant magnetic flux density at P decreases to a value that is equal to the flux density due to either wire at P.

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