23 Fig. (a) shows the top view of two long parallel wires, wire X and wire Y, carrying currents I_X and I_Y respectively in a direction perpendicular to the plane of the paper. The distance between wire X and wire Y is *L*.

Fig. (b) shows the variation of the net magnetic field at distances to the right of wire Y along the line joining wire X and wire Y. At a distance *d* from wire Y, the net magnetic field is zero.

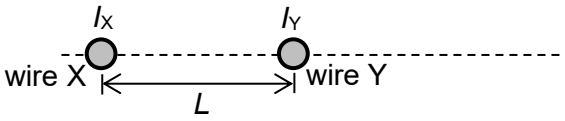

Fig. (a) top view (not to scale)

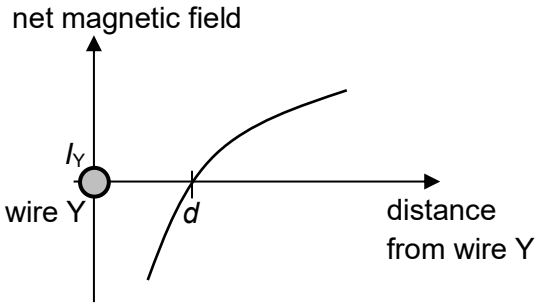

Fig. (b)

Given that the ratio $\frac{I_X}{I_Y}$ is 4.00 and taking the upwards direction to be positive, which of the following gives the relative direction of I_X and I_Y and the value of *L* in terms of *d*?

	relative direction of I_X and I_Y	*L* in terms of *d*
A	I_X and I_Y flow in opposite directions.	*d*
B	I_X and I_Y flow in the same direction.	*d*
C	I_X and I_Y flow in opposite directions.	*3d*
D	I_X and I_Y flow in the same direction.	*3d*