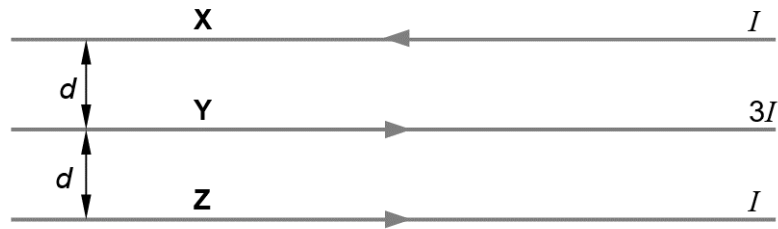


- 24** The diagram below shows three long, parallel, straight wires X, Y and Z placed in the same plane in a vacuum. Wires X and Z each carries a current of I , and wire Y carries a current of $3I$. Wire Y is halfway between wire X and wire Z.



The magnitude of the force per unit length acting between X and Z is F .

What is the direction and magnitude of the net force per unit length acting on Z?

| | <u>Direction</u> | <u>Magnitude</u> |
|----------|------------------|------------------|
| A | Towards Y | F |
| B | Towards Y | $5F$ |
| C | Away from Y | $5F$ |
| D | Away from Y | $7F$ |