

- 8 Two long straight parallel wires P and Q carry currents into the plane of the paper, as shown in Fig. 8.1.



Fig. 8.1

The current in P is I and the current in Q is $2I$.

- (a) (i) On Fig. 8.1, draw an arrow to show the direction of the magnetic field at wire Q due to the current in wire P. Label this arrow B. [1]

- (ii) On Fig. 8.1, draw another arrow to show the direction of the force acting on wire Q due to the current in wire P. Label this arrow F. [1]

- (b) (i) State, with a reason, how the magnitude of the force acting on wire P compares with the magnitude of the force acting on wire Q.

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..... [2]

- (ii) State how the direction of the force on wire P compares with the direction of the force on wire Q.

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..... [1]