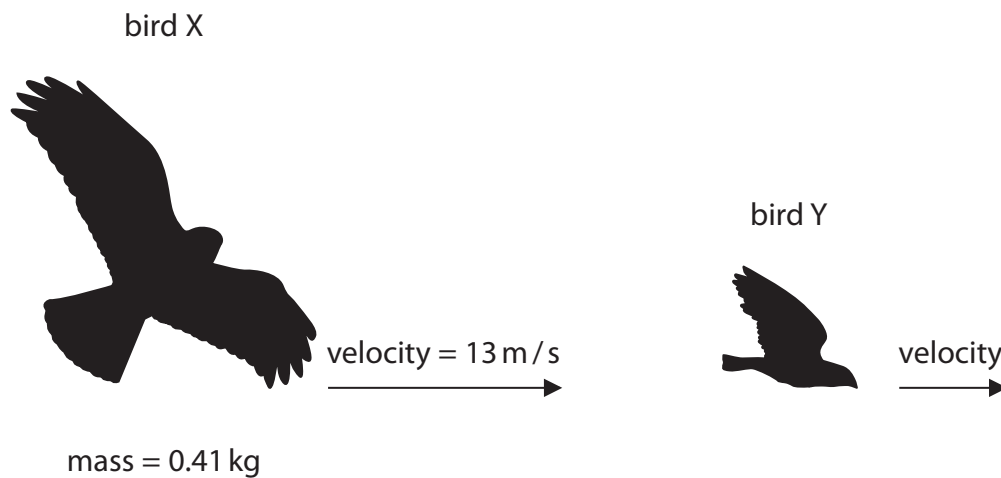


- 4 The diagram shows two birds, just before bird X catches the smaller bird Y.

Both birds are travelling horizontally at constant velocity.



- (a) Show that the momentum of bird X is about 5 kg m/s.

(2)

- (b) The momentum of bird Y just before it is caught is 0.15 kg m/s.

Calculate the total momentum of the birds just before bird X catches bird Y.

(1)

momentum = ..... kg m/s

- (c) State the total momentum of the birds just after bird X has caught bird Y.

(1)

momentum = ..... kg m/s



(d) Bird Y has a mass of 0.17 kg.

Calculate the velocity of the birds just after bird X has caught bird Y.

(3)

velocity = ..... m/s

**(Total for Question 4 = 7 marks)**

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