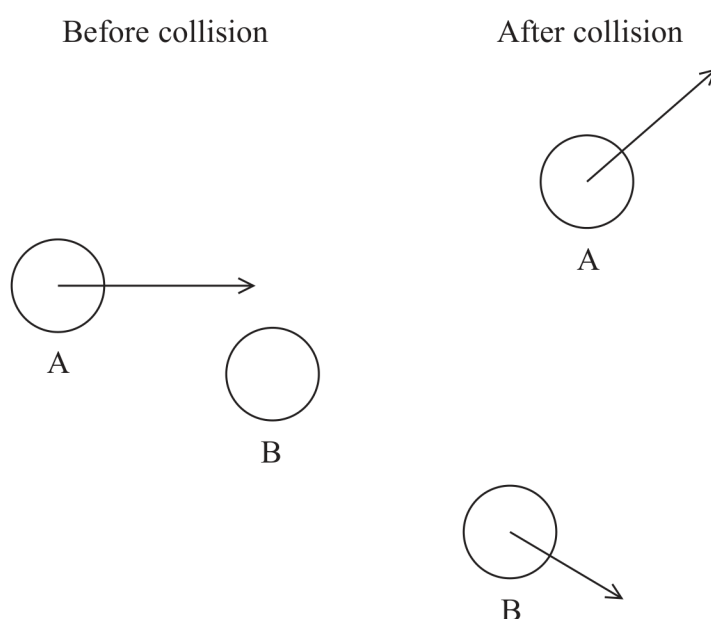14 A student used a spreadsheet to model the conservation of momentum.

(a) State the principle of conservation of momentum.

(2)

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(b) The spreadsheet modelled an elastic collision between object A and object B.

Before collision

After collision

A

Not to scale

A

B

B

The spreadsheet shows the initial values and final values when the student tested the model.

	A	B	C	D	E
1		Initial values		Final values	
2		object A	object B	object A	object B
3	mass / kg	0.85	1.70	0.85	1.70
4	magnitude of velocity / m s^{-1}	1.30	0.00	0.98	0.54
5	angle of velocity to x direction / °	0.0	0.0	54.5	−48.0
6					

(i) Deduce whether the values show an elastic collision.

(3)

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(ii) Deduce whether the values show the conservation of momentum.

(5)

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(Total for Question 14 = 10 marks)