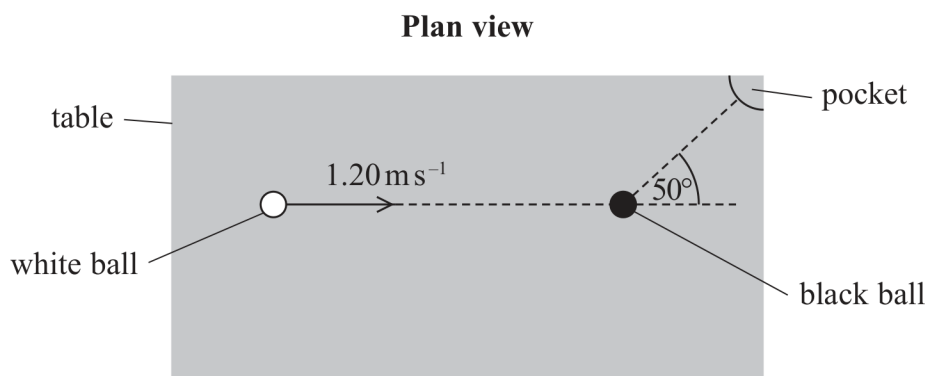12 In a game of snooker, a white ball and a black ball of equal mass are on a horizontal table. A player hits the white ball which then moves with a velocity of $1.20\,\text{m s}^{-1}$ before colliding with the black ball. The player hopes that the collision will knock the black ball towards the pocket at the corner of the table as shown.

**Plan view**



After the collision, the velocity of the white ball was at 35° to its original path, as shown below.
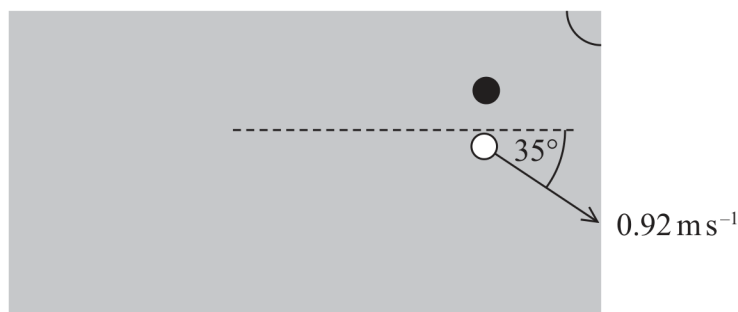


(a) This collision was inelastic.

State what is meant by inelastic.

(1)

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(b) For this situation, a scaled vector diagram showing the velocities of the balls can be used to demonstrate the law of conservation of momentum.

Explain why.

(2)

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(c) Deduce whether the black ball moves towards the pocket. You should use a scaled vector diagram.

(5)

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**(Total for Question 12 = 8 marks)**