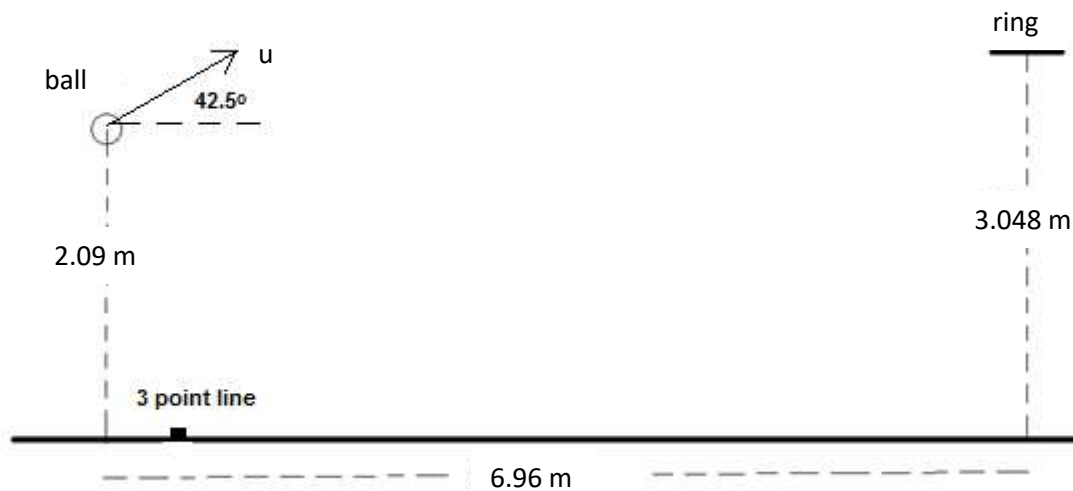


**Question 12****(17 Marks)**

The Perth Wildcats basketball team is two points down and Nat Jawai has the ball in centre court. He puts up the shot and scores three points.



- a) In the space below, draw a diagram of the ball showing the force/s acting on it whilst in flight. Assume no air resistance. (2 Marks)

- b) He propels the ball at an angle to the horizontal of  $42.5^\circ$ . What is the initial speed of the ball as shown in the diagram? (6 Marks)

- c) Calculate the velocity as it passes through the ring in order to score the three points to win the game. (7 Marks)

- d) On the diagram below, draw the path of the ball with and without air resistance. Assume that the basketball is launched with the same initial velocity and at the same angle as the calculations required from part b) of this question.

(2 Marks)

