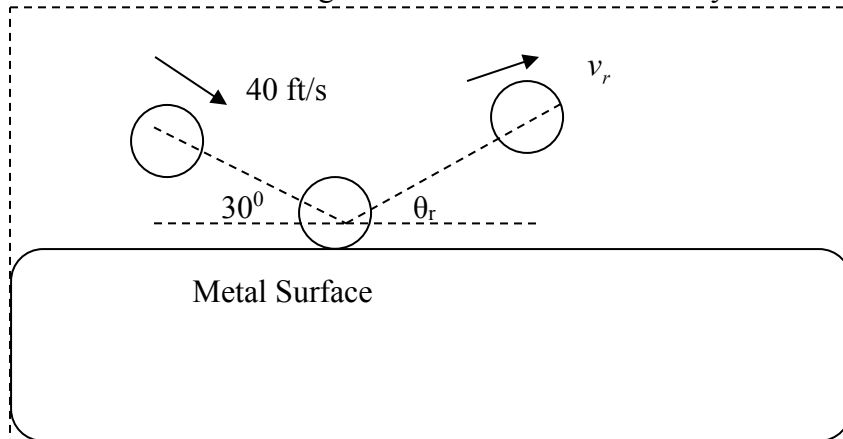


**TOPIC**

Engineering Mechanics (Statics and Dynamics) – Section VII – Question 13

**QUESTION**A steel ball falls on a large metal surface with a velocity of 40ft/s at an angle of  $30^\circ$ .

The rebound velocity in ft/s of the ball is most nearly (assume a coefficient of restitution between the ball and plate to be 0.47)

- (A) 9.400
- (B) 18.80
- (C) 34.64
- (D) 35.89

**HINT**

The coefficient of restitution,  $e$  is given by

$$e = \frac{|\text{Relative vertical velocity at separation}|}{|\text{Relative vertical velocity at approach}|}$$

Equate the momentum in the  $x$  -direction.

**CONTRIBUTOR**

Autar Kaw