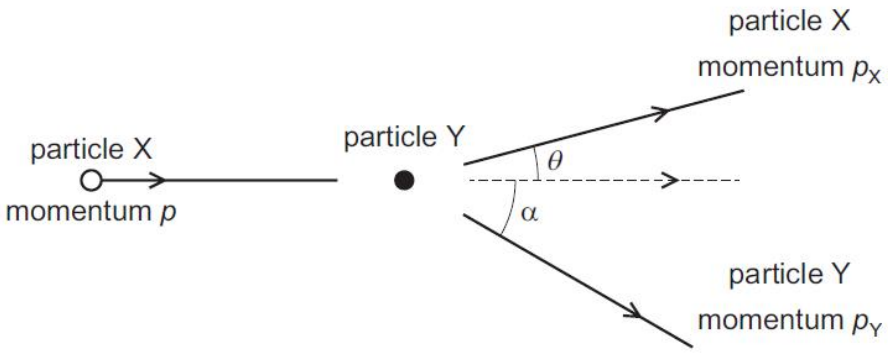
7 A particle X has initial momentum p. It collides with a stationary particle Y. The particle X is deflected through angle θ and its momentum is p_X. The particle Y moves off at angle α to the original direction of motion of particle X with momentum p_Y as shown.



Which equation is a correct statement for momentum in this collision?

A $p = p_X + p_Y$

B $p = p_X \sin\theta + p_Y \sin\alpha$

C $p_X \cos\theta = p_Y \cos\alpha$

D $p_X \sin\theta = p_Y \sin\alpha$