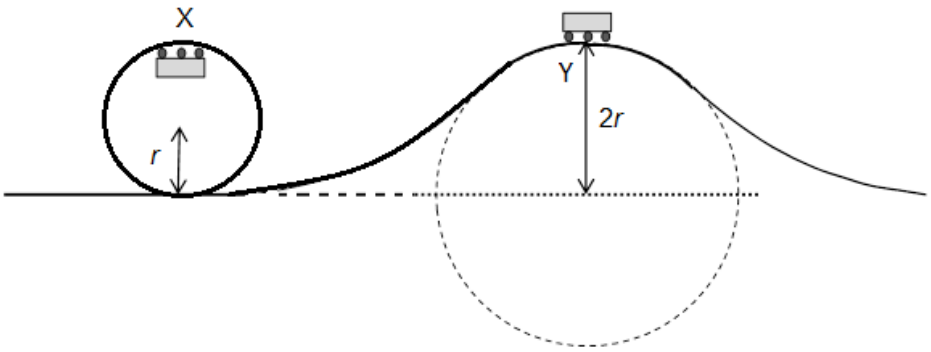
9 In a roller coaster ride, a cart of mass m loops a loop of radius r before racing over a hump of radius of curvature $2r$ as shown in the diagram.

If the cart just remains in contact with the track at the top of the loop at point X, what is the force the cart exerts on the track at the top of the hump at point Y? Assume that resistive forces are negligible, and ignore the dimensions of the cart.



A 0 **B** $\frac{mg}{2}$ **C** mg **D** $\frac{3mg}{2}$