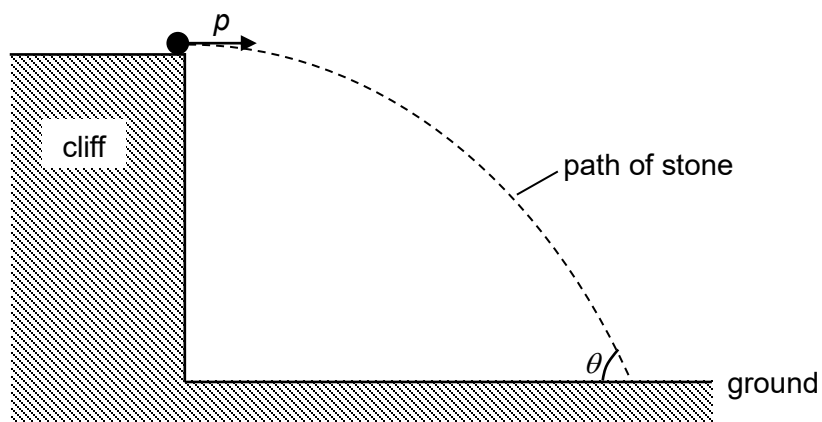4   A stone is thrown horizontally from the top of a cliff with an initial momentum p and hits the ground at an angle θ to the horizontal. The path of the stone from the cliff to the ground is as shown in the diagram.

Ignoring the effects of air resistance, which of the following expressions gives the change in the momentum of the stone from the point of launch to the point it hits the ground?

A p **B** $2p$ **C** $p \sin \theta$ **D** $p \tan \theta$