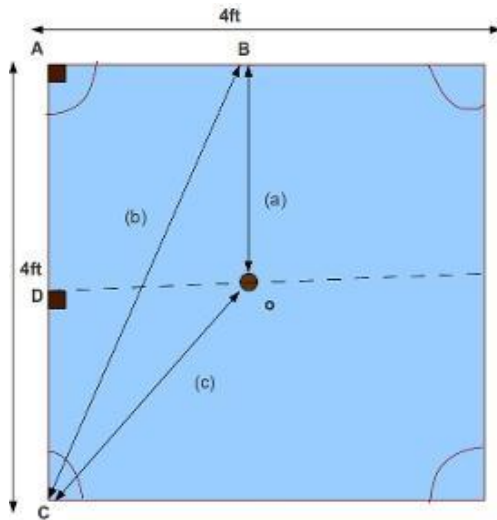A carrom board (4' X 4') has the queen at the centre. The queen hit by the striker moves to the front edge rebounds and goes in the hole behind the striking line. The displacement of the queen from the centre to the hole is

Solution

In right angled triangle DOC according to the Pythagoras' theorem
$$CO^2 = DC^2 + DO^2 = 2^2 + 2^2 = 8$$
The displacement of the queen from the centre to the hole is

$$CO = \sqrt{8} = 2.82ft.$$

Answer: $2.82 ft$.