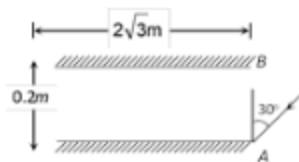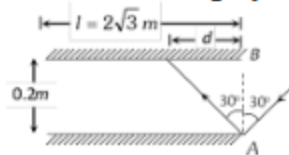**Q6.** Two plane mirrors. A and B are aligned parallel to each other, as shown in the figure. A light ray is incident at an angle of 30° at a point just inside one end of A. The plane of incidence coincides with the plane of the figure. The maximum number of times the ray undergoes reflections (including the first one) before it emerges out is

A) 28

B) 30

C) 32

D) 34

Answer: B) 30

From the following ray diagram

$d = 0.2 \tan 30 = 0.2\sqrt{3}$

$l/d = 2\sqrt{3} / (0.2\sqrt{3}) = 30$

Therefore, maximum number of reflections are 30.