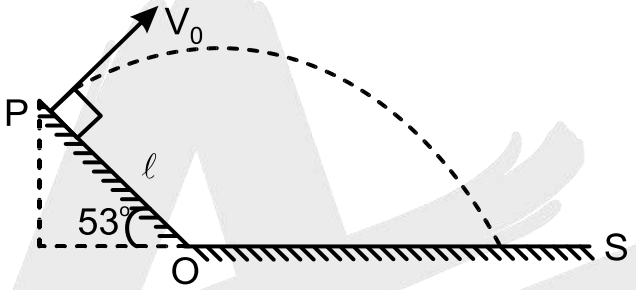
## DPP – 3

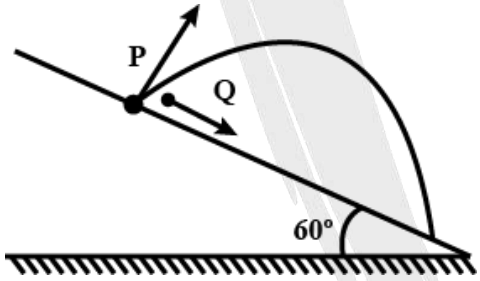
**Q.1** A projectile is thrown with a speed $u$, at and an angle $\theta$ to an inclined plane of inclination $\beta$. The projectile thrown such that it strikes the inclined plane normally. Angle of projection with plane $\theta = \cot^{-1}(k\tan\beta)$. Value of $B$ is

**Q.2** A child throws a ball so as to clear a wall of height $h$ and at a distance $x$ from it. The minimum speed required For clearing the wall is $g\left(h + \sqrt{\frac{h^2}{k^2} + x^2}\right)$ Value of K is.

**Q.3** A stone is projected from point $P$ on the inclined plane with velocity $v_0 = 10$ m/s directed perpendicular to the plane. The time taken (in sec) by the stone to strike the horizontal ground $S$ is (Given PO $= \ell = 10$ meter)

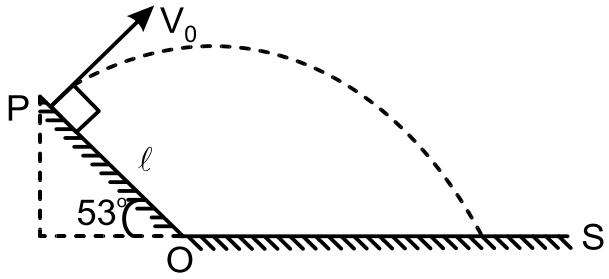



**Q.4** A particle $P$ is projected from a point on the surface of smooth inclined plane (see figure). Simultaneously another particle $Q$ is released on the smooth inclined plane from the same position. P and Q collide after $t = 4$ s. The speed of projection of $P$ is :-



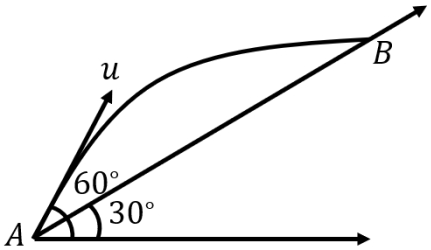

(A) 5 m/s (B) 10 m/s (C) 15 m/s (D) 20 m/s

**Q.5** A stone is projected from point P on the inclined plane with velocity $v_0 = 10$ m/s directed perpendicular to the plane. The time taken by the stone to strike the horizontal ground S is (Given PO $= \ell = 10$ meter)



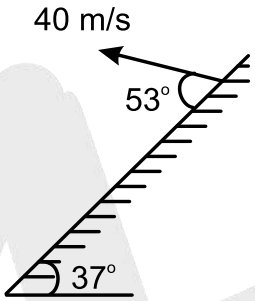

(A) 1.5sec (B) 1.4sec (C) 2sec (D) 2.3sec

**Q.6** Time taken by the projectile to reach from $A$ to $B$ ist. Then the distance $AB$ is equal to :-




(A) $\frac{ut}{\sqrt{3}}$ (B) $\frac{\sqrt{3}ut}{2}$ (C) $\sqrt{3}$ ut (D) 2 ut

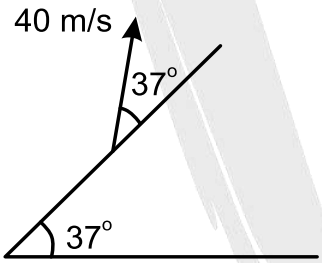
**Q.7** In the given diagram




(A) Time of flight is 8sec (B) Range along inclined is 384 m

(C) max distance from inclined is 64 m. (D) All the above.

**Q.8** In the given diagram, A particle is projected with speed 40 m/5 at 37° with inclined of indination angle also 37°. choose correct options




(A) Rangle along inclined 84 m (B) Time of flight is 8sec

(C) Max distance from inclined is 62 m (D) Max distance from inclined is 36 m

## ANSWER KEY

**1.** 2 **2.** K = 1 **3.** 2 **4.** (B) **5.** (C) **6.** (A) **7.** (A,B,C,D)

**8.** (A,D)