



A ball is thrown upward at $t = 0$ from the ground at O . It reaches a maximum height $y_{OA} = h$ at A when $t = t_{OA}$.

Find the total time \mathcal{T} from O to A , $t = \mathcal{T}$.

- A) $\mathcal{T} = \frac{v_0}{g}$ and $\mathcal{T} = \sqrt{\frac{2h}{g}}$
- B) $\mathcal{T} = \frac{v_0}{g}$ only
- C) $\mathcal{T} = \sqrt{\frac{2h}{g}}$ only
- D) None of the above

“ $v = v_0 + at$ ” implies that $v_0 = g\mathcal{T}$.

Also “ $s = v_0 t + \frac{1}{2}gt^2$ ” implies that $\mathcal{T} = \sqrt{\frac{2h}{g}}$.

Answer **A**.