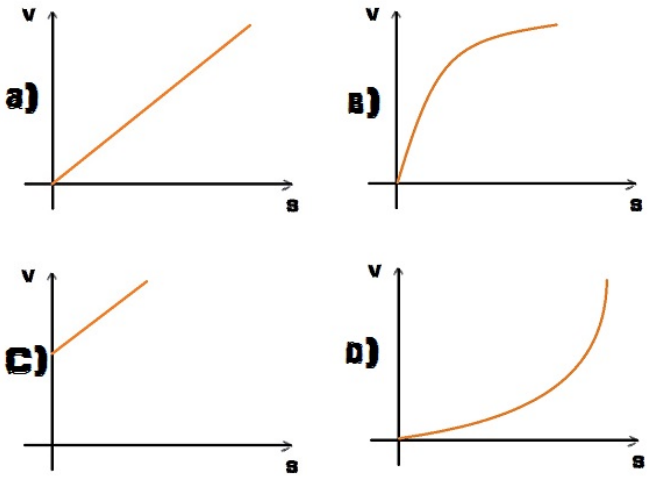
Example: A body starts from rest and moves along a straight line with constant acceleration. The variation of speed v with distance s is given by the graph



{ Hint: The problem given has $v_o = 0$

Now acceleration = constant (lets say k) = $\frac{dv}{dt}$

$\Rightarrow k = v\frac{dv}{ds}$

$\Rightarrow \int_0^v v dv = \int_0^s k ds$

$\Rightarrow v = \sqrt{2ks}$

The graph is proportional to square root function

Hence , b (as it is the only graph with such a property)

Answer : b) is the correct graph }