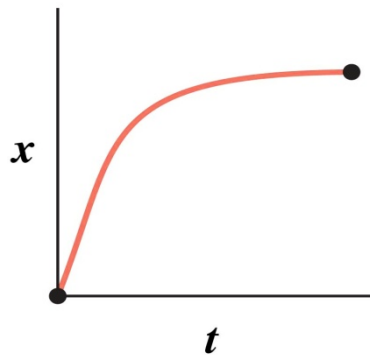
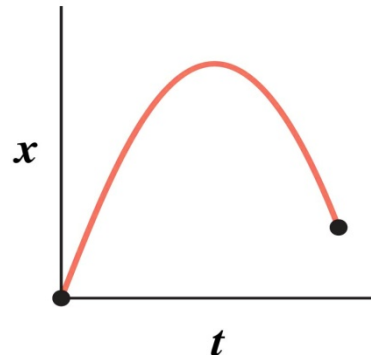


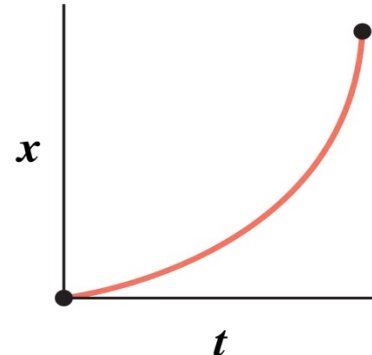
The figure shows position-versus-time graphs for four objects. Which starts slowly and then speeds up?



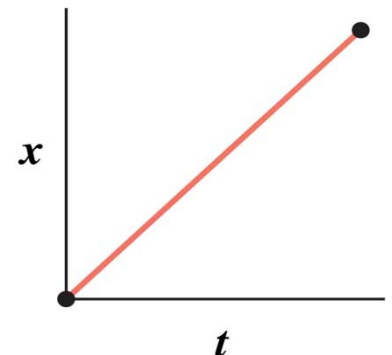
A.



B.




C.



D.

• Ann is looking out her apartment window, when suddenly she notices a TV set falling down. Which one of the following sentences is not true? Assume that the TV set was released with zero initial velocity (free fall), and consider the size of the window known. For simplicity ignore the TV size (i.e. very large window) and assume no air resistance.

- A. If Ann can record how long the TV set is visible, then she can figure out at which height (h) the TV set started the free fall (and thus who at which floor has an “issue”).
- B. The velocity of the TV set **at the half time** through the observed fall is the average of the velocities at top and bottom of the window. [You can use this as a hint for the last HW problem.]
- C. If Ann can measure the velocity at which the TV set just appears at top of her window, then she can figure out h .
- D. Same as C, but “appear at top” \rightarrow “disappear at bottom”.
- E. Same as C, but velocity \rightarrow time.



• **Standing on a roof, you simultaneously throw one ball straight up and drop another from rest. Which hits the ground moving faster?**

- A. The ball dropped from rest
- B. The ball thrown straight up
- C. They have the same velocity.