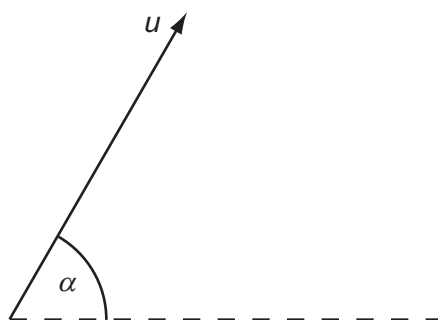


- 9 A projectile is fired at an angle α to the horizontal at a speed u , as shown.



What are the vertical and horizontal components of its velocity after a time t ?
Assume that air resistance is negligible. The acceleration of free fall is g .

	vertical component	horizontal component
A	$u \sin \alpha$	$u \cos \alpha$
B	$u \sin \alpha - gt$	$u \cos \alpha - gt$
C	$u \sin \alpha - gt$	$u \cos \alpha$
D	$u \cos \alpha$	$u \sin \alpha - gt$

- 10 A force F is applied to a freely moving object. At one instant of time, the object has velocity v and acceleration a .

Which quantities **must** be in the same direction?

- A** a and v only
- B** a and F only
- C** v and F only
- D** v , F and a