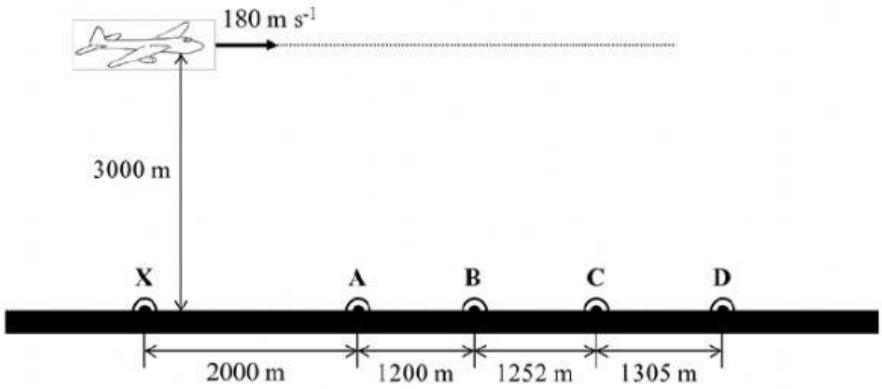
Projectile Motion Conceptual Questions

1. A projectile is launched at a certain angle from the ground. Are the following statements **TRUE or FALSE?**
   a) Only force of gravity is acting on the object.
   b) The projectile involves constant velocity along the horizontal direction and constant acceleration in the vertical direction.
   c) The vertical component of the velocity is constant.
   d) The horizontal component of the velocity is constant.
   e) The horizontal component of the velocity of the projectile varies linearly with time.
   f) The horizontal component of acceleration is non-zero and constant. It its true, give the value.
   g) The vertical component of acceleration is non-zero and constant. It its true, give the value.
   h) The vertical component of displacement is also known as range.
   i) The horizontal component of displacement is measured as a straight line parallel to the ground.

2. A stone is falling freely near the surface of the Earth. Which quantity remains unchanged?
   A. Speed
   B. Velocity
   C. Acceleration
   D. Distance

3. What is the acceleration of the projectile when it reaches its maximum height?

4. A rescue plane is flying horizontally 3000 m above the ground when it drops a bundle of food above point X as shown in the figure above. Four points A, B, C and D are the possible landed points of the bundle.



LIVEWORKSHEETS

a) What is the vertical component of velocity of the rescue plane when it is 3000 m above point X.
b) What is the vertical displacement if the bundle landed at point D.
c) What is the value of range if the bundle landed at point B.

5. A ball is thrown straight up into the air, it reaches the top of its path and then falls back down to its initial position. During its flight, when is it accelerating in the downward direction? Ignore air resistance.
   A. Never.
   B. When it is moving down.
   C. When it is moving up.
   D. Always.

LIVEWORKSHEETS