this question is based on circular motion in a vertical plane: The maximum value of acceleration that the human body can safely tolerate for short time intervals is nine times that due to gravity. Calculate the maximum speed with which a pilot could safely pull out of a circular dive of radius 4.00m . the answer: 88.5m/s

The force of inertia is act on a pilot when he moves on a circle. Its direction is opposite to the radius. So, when the pilot will be in the lowest point of trajectory, he will have the maximum weight, which equal to:

$$P = F_i + F_g = M\frac{v^2}{R} + Mg$$

From the task, P should be equal to $9Mg$ to find the maximum speed.

$$9Mg = M\frac{v^2}{R} + Mg$$

$$9g = \frac{v^2}{R} + g \rightarrow v = \sqrt{8gR}$$

$$v = \sqrt{8 * 9.8m/s^2 * 4m} = 17.71m/s$$

Answer: $v = 17.71m/s$

Answer in the task is wrong