1 In an experiment to determine the acceleration of free fall *g*, a ball bearing is held by an electromagnet. When the current to the electromagnet is switched off, a clock starts and the ball bearing falls. After falling a distance *h*, the ball bearing strikes a switch to stop the clock which measures the time *t* of the fall.

If systematic errors cause *t* and *h* to be measured incorrectly, which error must cause *g* to appear greater than actual?

A *h* measured correctly, and *t* measured smaller than actual

B *h* measured smaller than actual, and *t* is measured correctly

C *h* measured larger than actual, and *t* measured larger than actual

D *h* measured smaller than actual, and *t* measured larger than actual

2 A ball is released from rest at a position X above a horizontal surface initially. At 1.0 s, it