ANSWERS ON LAST PAGE

Q7.1

A piece of fruit falls straight down. As it falls,

A. the gravitational force does positive work on it and the gravitational potential energy increases.

B. the gravitational force does positive work on it and the gravitational potential energy decreases.

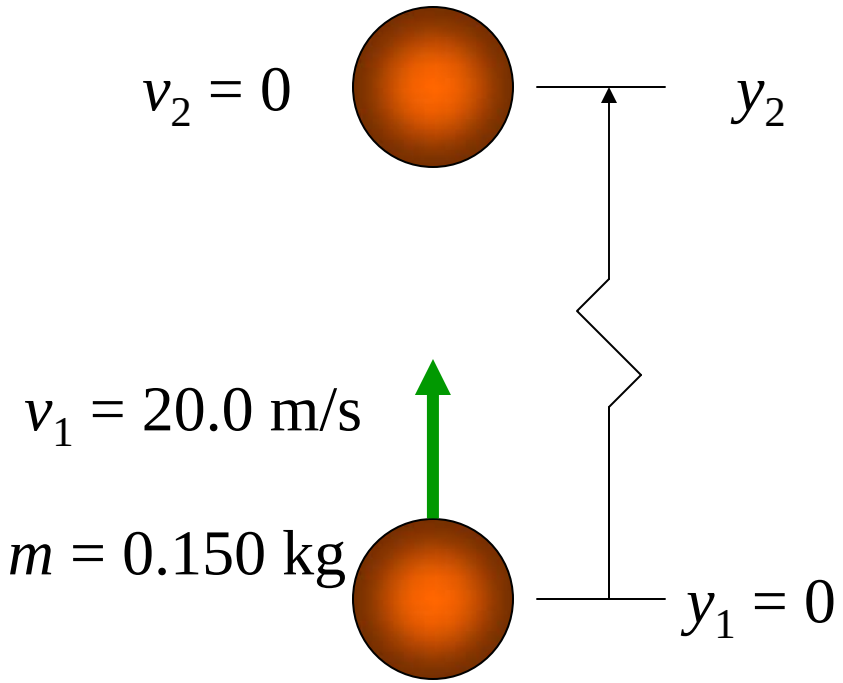
C. the gravitational force does negative work on it and the gravitational potential energy increases.

D. the gravitational force does negative work on it and the gravitational potential energy decreases.

Q7.2

You toss a 0.150-kg baseball straight upward so that it leaves your hand moving at 20.0 m/s. The ball reaches a maximum height y_2.

What is the speed of the ball when it is at a height of $y_2/2$? Ignore air resistance.



A. 10.0 m/s

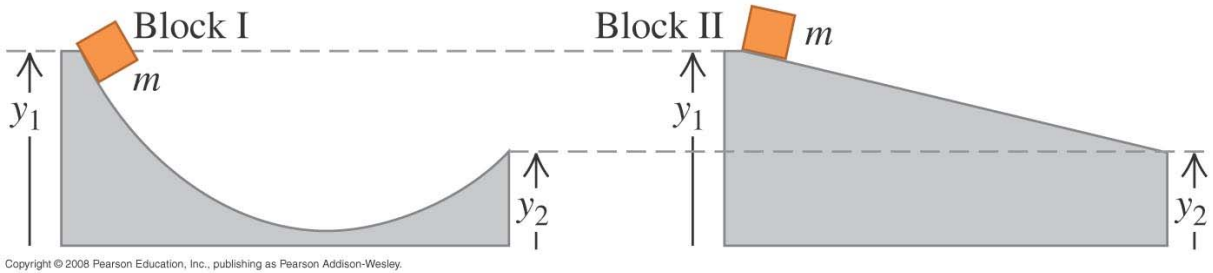
B. less than 10.0 m/s but more than zero

C. more than 10.0 m/s

D. not enough information given to decide

Q7.4

The two ramps shown are both frictionless. The heights y_1 and y_2 are the same for each ramp. A block of mass m is released from rest at the left-hand end of each ramp. Which block arrives at the right-hand end with the greater speed?



A. the block on the curved track

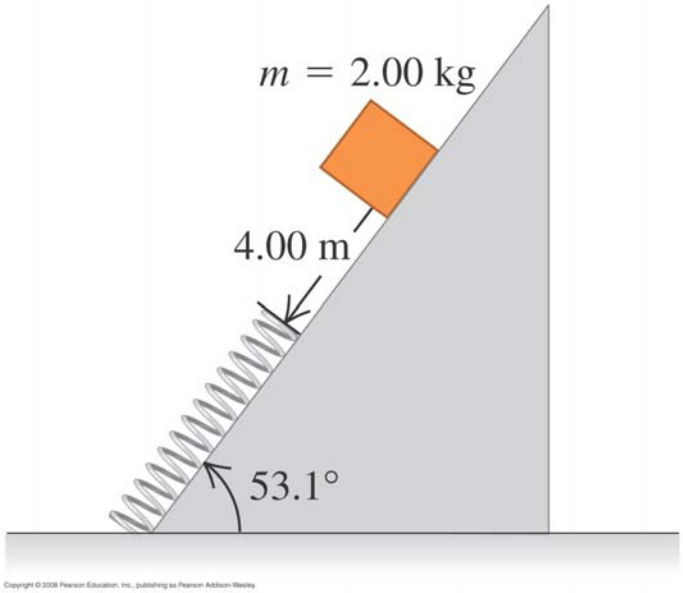
B. the block on the straight track

C. Both blocks arrive at the right-hand end with the same speed.

D. The answer depends on the shape of the curved track.

Q7.5

A block is released from rest on a frictionless incline as shown. When the moving block is in contact with the spring and compressing it, what is happening to the gravitational potential energy U_{grav} and the elastic potential energy U_{el}?



A. U_{grav} and U_{el} are both increasing.

B. U_{grav} and U_{el} are both decreasing.

C. U_{grav} is increasing, U_{el} is decreasing.

D. U_{grav} is decreasing, U_{el} is increasing.

E. The answer depends on how the block's speed is changing.

ANSWERS for Q7.:
1B 2C 4C 5D