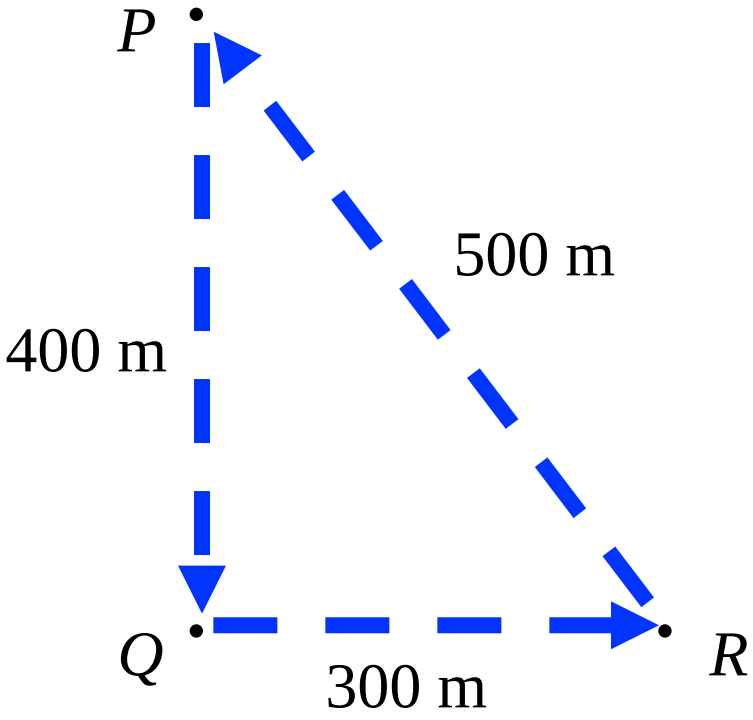
ANSWERS ON LAST PAGE

Q3.1

A bicyclist starts at point *P* and travels around a triangular path that takes her through points *Q* and *R* before returning to point *P*. What is the magnitude of her net displacement for the entire round trip?



A. 100 m

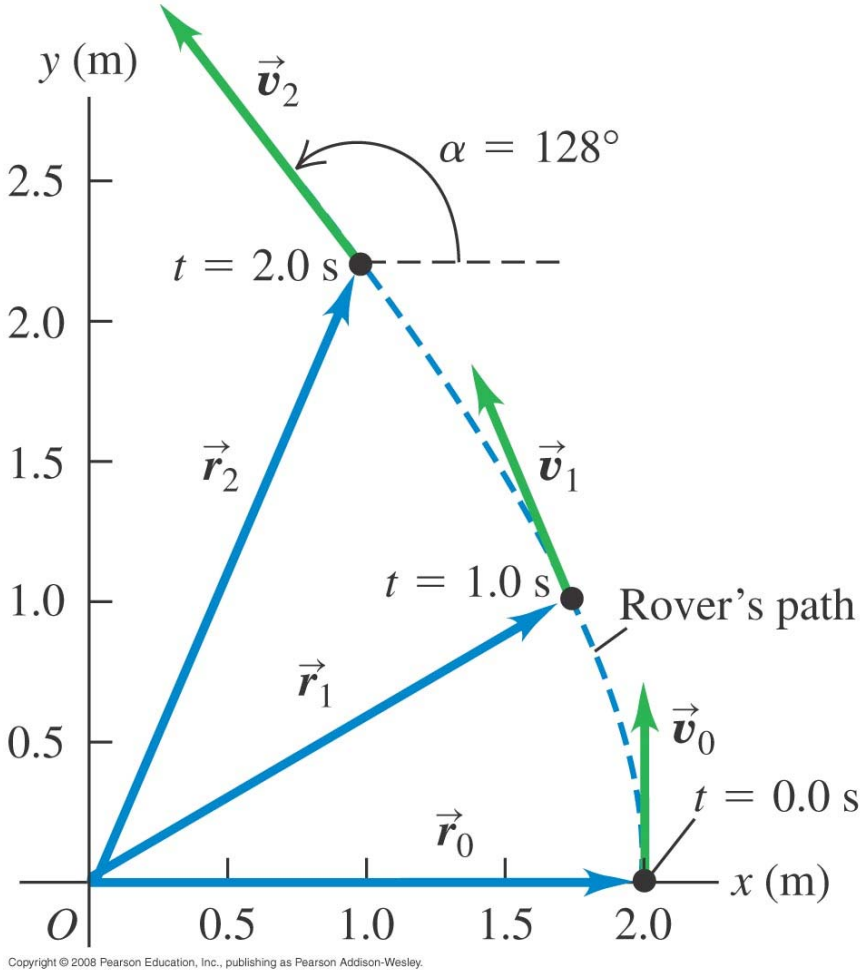
B. 200 m

C. 600 m

D. 1200 m

E. zero

Q3.2



This illustration shows the path of a robotic vehicle, or rover. What is the direction of the rover's average acceleration vector for the time interval from $t = 0.0$ s to $t = 2.0$ s?

A. up and to the left

B. up and to the right

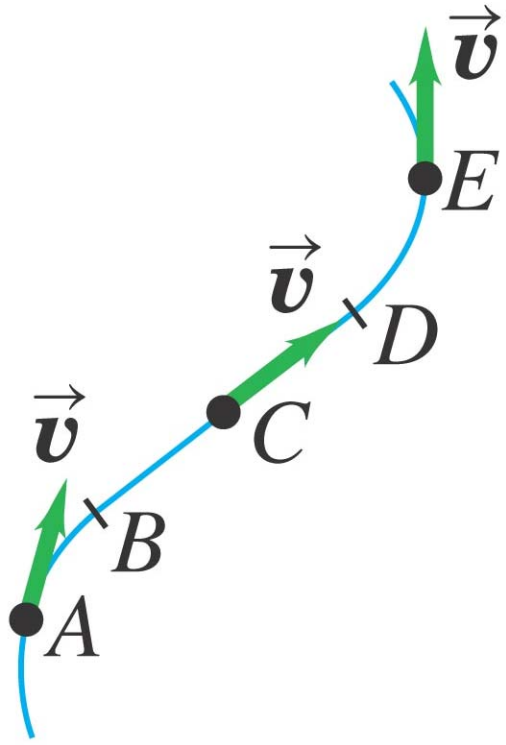
C. down and to the left

D. down and to the right

E. none of the above

Q3.3

The motion diagram shows an object moving along a curved path at constant speed. At which of the points *A*, *C*, and *E* does the object have *zero* acceleration?



A. point *A* only

B. point *C* only

C. point *E* only

D. points *A* and *C* only

E. points *A*, *C*, and *E*

Q3.9

A zoo keeper fires a tranquilizer dart directly at a monkey. The monkey lets go at the same instant that the dart leaves the gun barrel. The dart reaches a maximum height *P* before striking the monkey. Ignore air resistance.

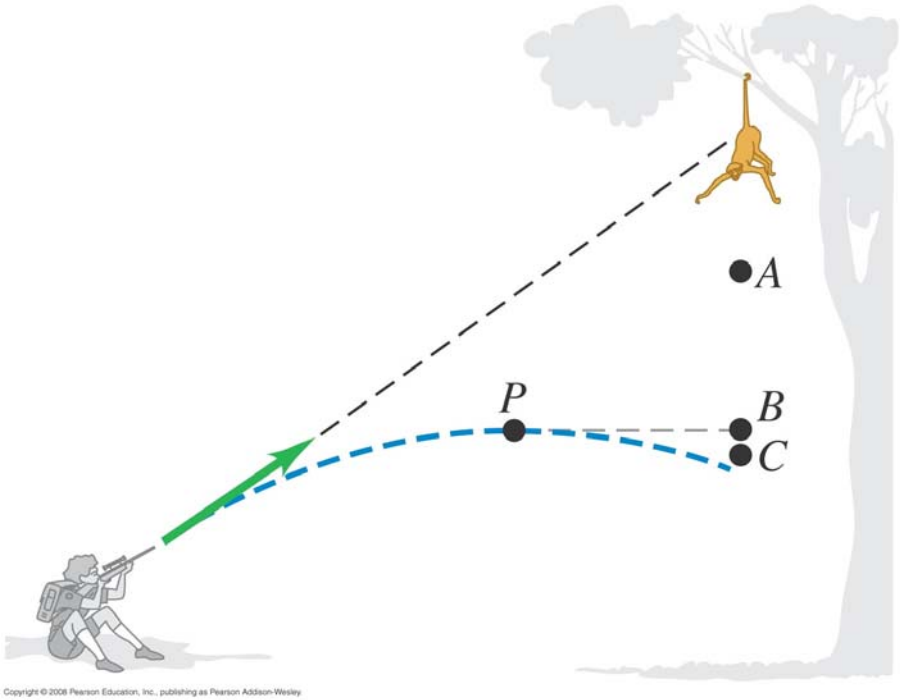
When the dart is at *P*, the monkey

A. is at *A* (higher than *P*).

B. is at *B* (at the same height as *P*).

C. is at *C* (lower than *P*).

D. not enough information given to decide



Q3.10

A projectile is launched at a 30° angle above the horizontal. Ignore air resistance. The projectile's acceleration is greatest

A. at a point between the launch point and the high point of the trajectory.

B. at the high point of the trajectory.

C. at a point between the high point of the trajectory and where it hits the ground.

D. misleading question — the acceleration is the same (but nonzero) at all points along the trajectory

E. misleading question — the acceleration is zero at all points along the trajectory

ANSWERS for Q3.:
1E 2A 3B 9A 10D