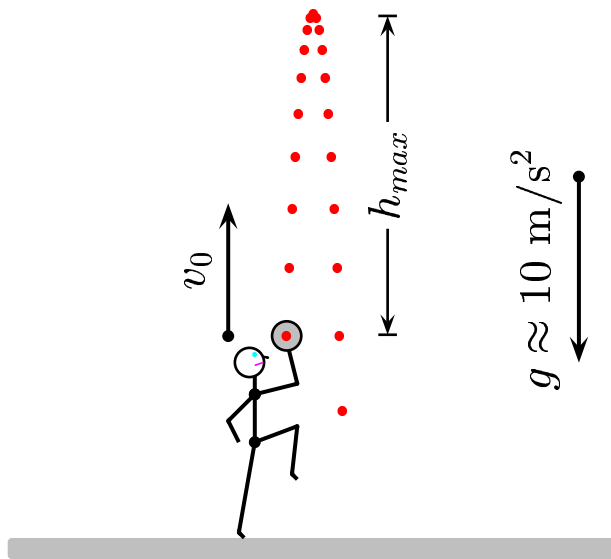


Given: A stone is thrown upward and at the tip-pity top of its path its vertical velocity is momentarily zero.



What is its acceleration at this point?

- A)  $a_{top} = 9.8 \text{ m/s}^2$  and is directed down.
- B)  $a_{top} = 0 \text{ m/s}^2$  and its directed is undetermined.
- C)  $a_{top} = 9.8 \text{ m/s}^2$  and is directed up.

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Near the surface of the Earth, for all practical purposes the gravitational acceleration is constant, which is  $9.8 \text{ m/s}^2$  and is directed downward.

To illustrate how it works, let us take for example and upward initial velocity of  $9.8 \text{ m/s}^2$ . One second later the velocity will be zero. Two seconds later the velocity will be  $-9.8 \text{ m/s}^2$ . In other words, in each second the velocity is decreased by  $9.8 \text{ m/s}$ .

Answer **A**.