

Suppose that a bobcat can jump to a height of 1.50 m. It jumps at an angle of 50.00 relative to the horizontal. What speed does the bobcat have to leave the ground in order to reach that height?

Answer: 7.08 m/s

let the bobcat jumps with speed at an angle 50 degrees relative to the horizontal.

Height to be reached,

The component of speed in horizontal direction:

The component of speed in vertical direction:

We will use equation of motion:

where v is the final velocity, u is the initial velocity, a is the acceleration, s is the displacement.

The instantaneous speed at the highest point would be 0. Hence, $v=0$.

The initial velocity in the vertical direction is

The acceleration would be due to gravity in the downward direction,

The displacement would be the height reached,

Insert the values in the equation of motion:

Hence, the bobcat must leave the ground with the speed of 7.08 m/s at 50 degrees from the horizontal in order to reach the height of 1.50 m .

Which of the following sentences has a misplaced modifier? a. he only talks about changing his habits. [intended meaning: he only talks but does nothing else,

like, "grandpa bo had to go away." but margie, who has heard adults talking about the death, senses that her mother is avoiding the topic and has come to the conclusion that _____.

What does Siddhartha learn from listening intently to the river

Europeans developed a variety of colonization and migration patterns, influenced by different imperial goals, cultures, and the varied north american environments where they settled, and they competed with each other and american indians for resources.

A compact car will drive three miles east, five miles west, and then 13 miles east again. The car 1 gets 40 miles per gallon, and there is 4 of a gallon of gas left in the tank. Compute the relative distance and the total distance. Then decide if there is enough fuel for the trip. Show all the work please

The sum of two numbers is 70. Their difference is two less than the smaller number. What are the numbers?

Your hair is composed of live cells that need vitamins and nutrients.True/false

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