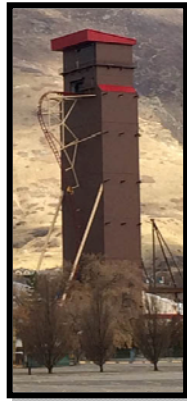


DISTANCE WITH TRIANGLES

The height of the first hill of a roller coaster is very important. Roller coasters use the acceleration due to gravity to complete its course. Thus, the height of the beginning of the coaster determines the _____ energy and therefore the kinetic energy and _____ of the roller coaster. Thus, the height of the Cannibal tower is critical to rest of the ride!



Useful Information

Height of Cannibal track as it exits the tower (h): 63 m

Questions

- Fill in the blanks of the above statement.
 - _____
 - _____
- A right isosceles triangle has a right angle and two 45° angles (see the picture below). This means that leg h (the height of the Cannibal track as it exits the tower) is _____ to the leg d (your distance from the base of the tower).
 - greater than
 - equal to
 - less than
- Using your answer to Question 2, find a location at which you are at a 45° angle to where the track exits the top of the Cannibal tower. Where is this location?
- With your knowledge of right isosceles triangles, how far are you from the base of the Cannibal tower?

d = _____ m

Hint: You can use the iPhone or iPod “Multi Protractor” or Android “Advanced Protractor” app (see p 13) to measure angle. Alternately, you could use this workbook itself as a low-tech tool to measure a 45° angle. Open the workbook with the back pages flat and the front page vertical at right angles; then sight along the edges of the pages to view a 45° angle.

