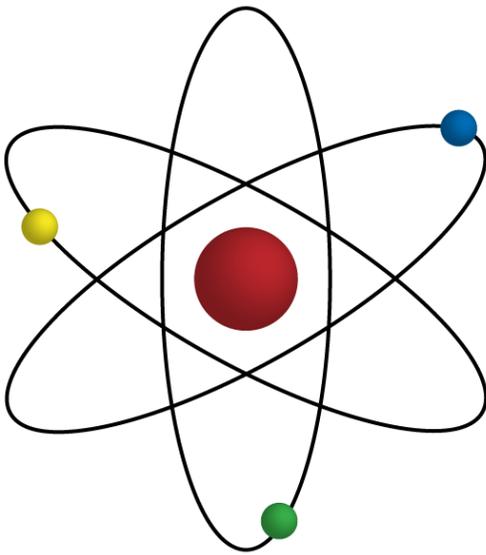
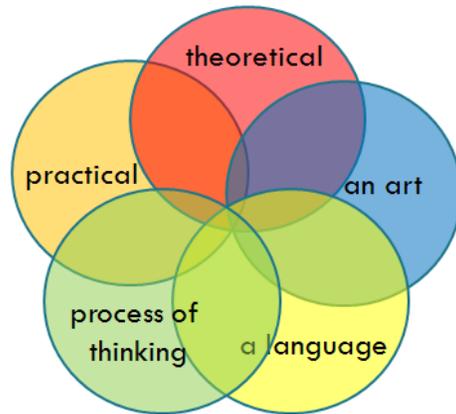




Educational Days



Mathematics is ...

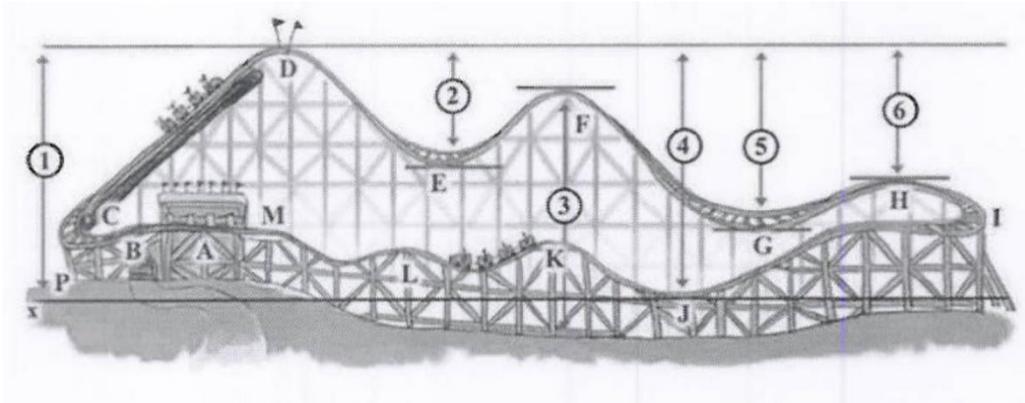


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Science



List the number or letters on the roller coaster that best match the phrases below:

- ____ maximum velocity
- ____ maximum acceleration
- ____ maximum kinetic energy
- ____ maximum gravitational potential energy
- ____ freefall area
- ____ where a machine makes the ride go inside of gravity
- ____ where the care moves with almost uniform velocity
- ____ where the coaster's velocity increases
- ____ high "g-force" zone
- ____ where friction has greatest effects
- ____ where riders decelerate

Why is Point D higher than Point F?

Many amusement park rides secure the passengers in seats with high backs and hold them in place with foam padded harnesses that come over both shoulders and firmly secure the upper body in place. What kind of ride is likely to need this type of system to protect the riders? Discuss the reason for this type of system in terms of the inertia of the passenger and the forces exerted on the passenger.

Water Rides

Each ride listed below includes the amount of water it requires. Use this information to answer the following questions.

Thunder River- 1,000,000 gallons

Log Flume- 600,000 gallons

1. How many gallons of water are in all the water rides? _____

2. Each gallon of water takes up 231 cubic inches of space.
How many cubic inches does the water in Thunder River require? _____

2a. How many cubic feet will this water fill? _____
(HINT: 1 cubic foot= 1,728 cubic inches)

- 2b. How many cubic yards will this water fill? _____
(HINT: 1 cubic yard= 27 cubic feet)

3. Draw a rectangular swimming pool that would hold the water in Thunder River.
Label its dimensions.

4. Calculate the weight of the water in Thunder River. _____
(HINT: Water weighs 62lbs. per cubic foot)

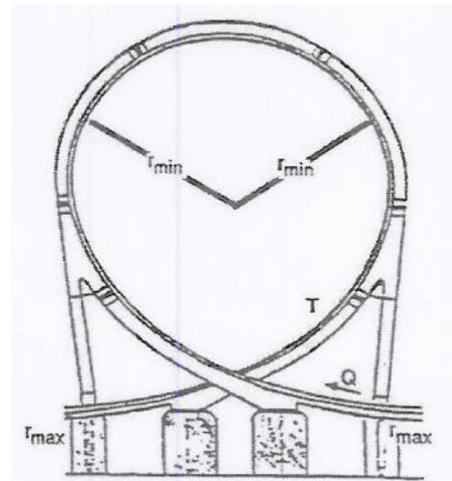
5. Calculate the total number of cubic yards of water in all the water rides at Six Flags St. Louis. _____

6. Calculate the total weight of all the water in the water rides. _____

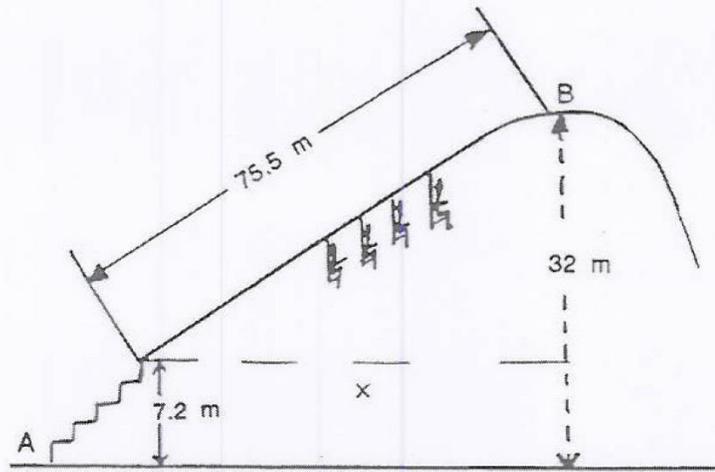
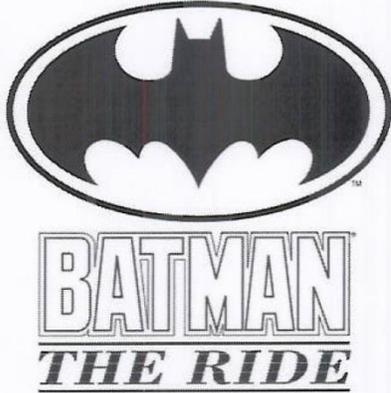
7. Draw a cylindrical storage tank that will hold the water that park Needs for all its water rides. Label the tank's dimensions. _____



1. How many people can ride in each train?
2. There are 3 trains. Over a period of one hour, 2,000 people can ride the Ninja. How many times will each train leave the station in one hour?
3. The track length of the Ninja is 2,430 ft. The ride lasts approximately 2 minutes. What is the average speed of the Ninja? Calculate the speed in miles per hour.
4. The Maximum speed of the Ninja is 65 mph. Why is the average speed so much slower?
5. The Ninja has one closed loop as pictured on the right. From point Q to point R, the radius of the loop decreases. From point R to point S, the radius remains the same. And from point S to T, the radius of the loop increases. If the radius at points R & S is 15 feet, what is the minimum length of the track in the loop?
6. A clockwise revolution has a negative magnitude and a counter clockwise has a positive magnitude. Assuming that your car enters the loop from the left, estimate the magnitude of one complete revolution.



Batman the Ride



1. There is 1,738,733 pounds of steel used to build BATMAN. Estimate the number of pounds of steel in each foot of track?
2. Using the Pythagorean Theorem, find x .
3. Find the slope of the first hill.
4. Joker has successfully blockaded the entrance to the BAT CAVE with a large cylinder of soil. If the cylinder's capacity is 50,000 cubic feet, and a cubic foot of soil weighs 90 pounds, calculate the weight that BATMAN needs to remove from the entrance.