RASKESTE RULLEBANE

Denne modellen har to rullebaner. Den rette er kortest, og den krumme er lengst.

Hvilken bane tror du er raskest, den rette eller den krumme?

Gjett, eller gjør et veddemål før du slipper kulene!

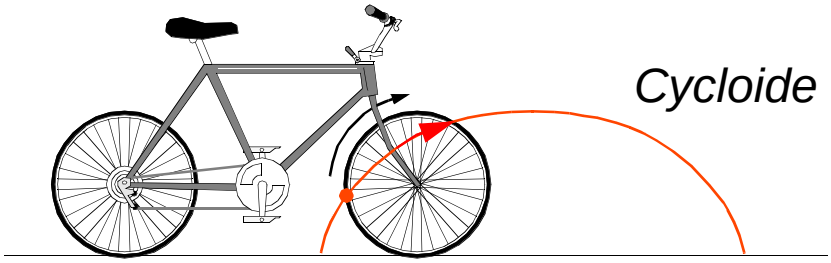
Skyv den røde knappen helt ned slik at begge kulene ruller inn i "kuleheisen". Før heisen langsomt opp til toppen til kulene ruller ut.

Klippes bort

Eksperimentarius gir deg et tips

Du så at den krumme banen var raskest, selv om denne er lengst. Men fordi denne banen er brattere til å begynne med, får kula så mye større fart at dette oppveier at banen er lengst.

Dette problemet var kjent alt på Isaac Newtons tid og ble kalt det *Brachyostochrone* problem. Newton og andre fant ut at den raskeste rulle-banen så likedan ut som det den banen et punkt på et hjul følger når det triller bortover.



Cycloide

Dette prinsippet utnyttes også i hopp-bakker, der det forskes på hvilken hoppbakke-form som gir best utnyttelse av farta. Slik forsk-ning har vært drevet ved Universitetet i Trondheim (NTNU).

En halv cycloide

Klippes bort

THE FASTEST TRACK

This model has two tracks. The straight one is the shortest and the bent one is the longest.

Which track do you think is the fastest: the straight one or the bent one?

Guess or make a bet before you drop the balls!

Push the read botten down until the two steel balls drops inside the elevator. Take the elevator slowly to the top until the two balls leaves the elevator.

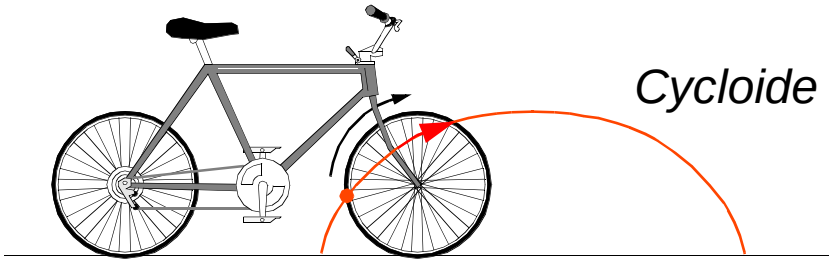
ENGLISH?

Klippes bort

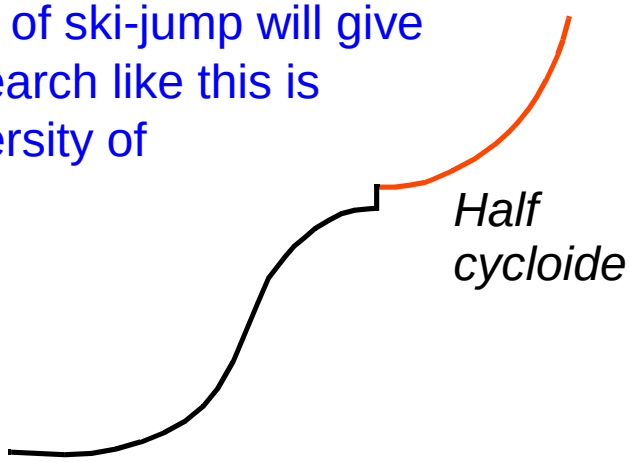
Experimentarius gives you a tip:

You discovered that the bent track was the fastest, even if it is the longest. Because this track is much steeper to start with, the ball rolls much faster. That makes up for the fact that the track is longer.

This problem was already known around Isaac Newton's time and was called the *Brachyostochrone problem.* Newton and his fellow colleagues discovered that the fastest track was the same course a point on a wheel follows when the wheel rolls over a straight surface.



This principle is used in ski jumps, where they research what shape of ski-jump will give the best speed. Research like this is going on at the University of Trondheim, NTNU.



ENGLISH!