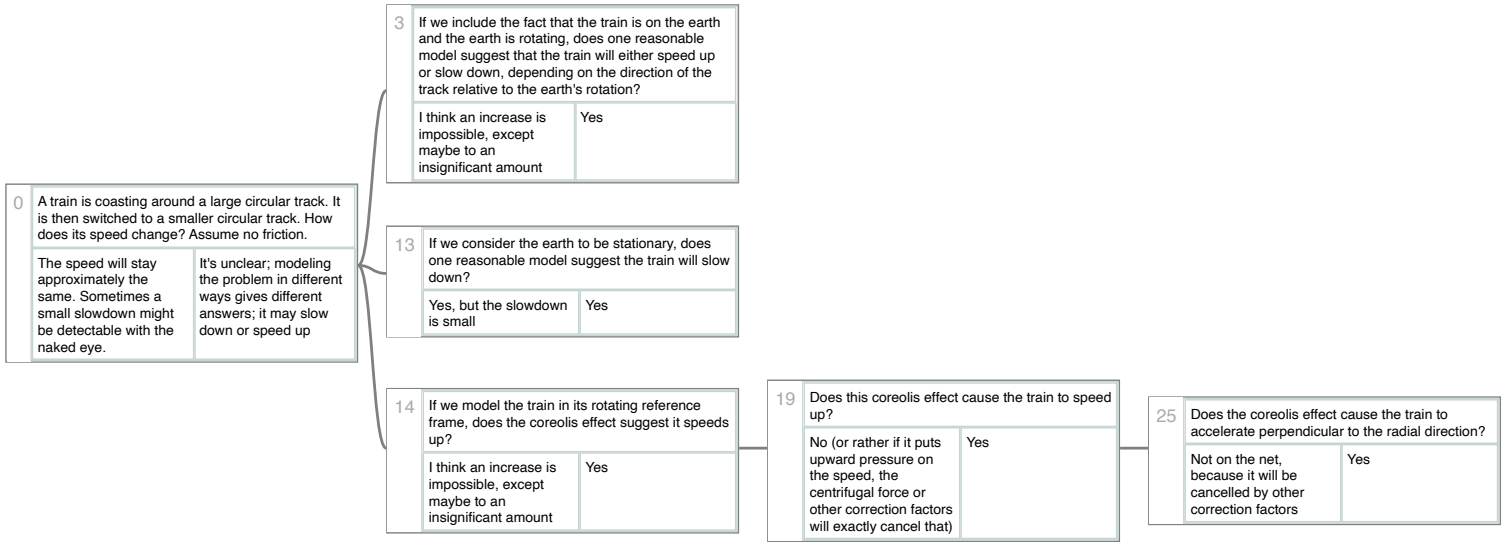
0
A train is coasting around a large circular track. It is then switched to a smaller circular track. How does its speed change? Assume no friction.
The speed will stay approximately the same. Sometimes a small slowdown might be detectable with the naked eye.
It's unclear; modeling the problem in different ways gives different answers; it may slow down or speed up
3
If we include the fact that the train is on the earth and the earth is rotating, does one reasonable model suggest that the train will either speed up or slow down, depending on the direction of the track relative to the earth's rotation?
I think an increase is impossible, except maybe to an insignificant amount
Yes
13
If we consider the earth to be stationary, does one reasonable model suggest the train will slow down?
Yes, but the slowdown is small
Yes
14
If we model the train in its rotating reference frame, does the coreolis effect suggest it speeds up?
I think an increase is impossible, except maybe to an insignificant amount
Yes
19
Does this coreolis effect cause the train to speed up?
No (or rather if it puts upward pressure on the speed, the centrifugal force or other correction factors will exactly cancel that)
Yes
25
Does the coreolis effect cause the train to accelerate perpendicular to the radial direction?
Not on the net, because it will be cancelled by other correction factors
Yes