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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.

H: To a good approximation, its speed stays the same. In some situations it may slow down.

D: Its speed stays exactly unchanged

1

In all situations, the track never exerts a force that opposes the train's direction of motion

H: 50%

D: 95%

3

The motion of all parts of the train is parallel to the track at the location of that part

H: 80%

D: 98%

4

A part of the track only ever exerts a force perpendicular to the track at the location of that part

H: 80%

D: 98%

5

Conditioned on 3=Yes and 4=Yes, the track never exerts a force that opposes the train's direction of motion

H: 70%

D: 97%

6

'1=Yes' means that the track never exerts a force that opposes the train's direction of motion

H: Yes

D: Yes

7

There is nothing except the track that can exert a force to change the train's speed

H: 70%

D: 97%

2

Conditioned on 1=Yes, its speed always stays exactly unchanged

H: 50%

D: 95%

8

Conditioned on 6=Yes and 7=Yes, the train's speed always stays exactly unchanged

H: 70%

D: 97%

9

Conditioned on 6=Yes and 7=Yes, nothing exerts a force that could change the train's speed

H: 80%

D: 98%

10

Conditioned on 9=Yes, the train never speeds up or slows down

H: 90%

D: 99%