

Slow walking velocity of an adult human

The slow, normal walking speed of an adult human is around 3,5km/h.

Slow walking speed	3,5km/h
Step length at 3,5km/h around	70cm
Steps per hour (with 70cm)	5000
Time to take a single step (70cm)	0,72s
Feet distance while standing	30cm

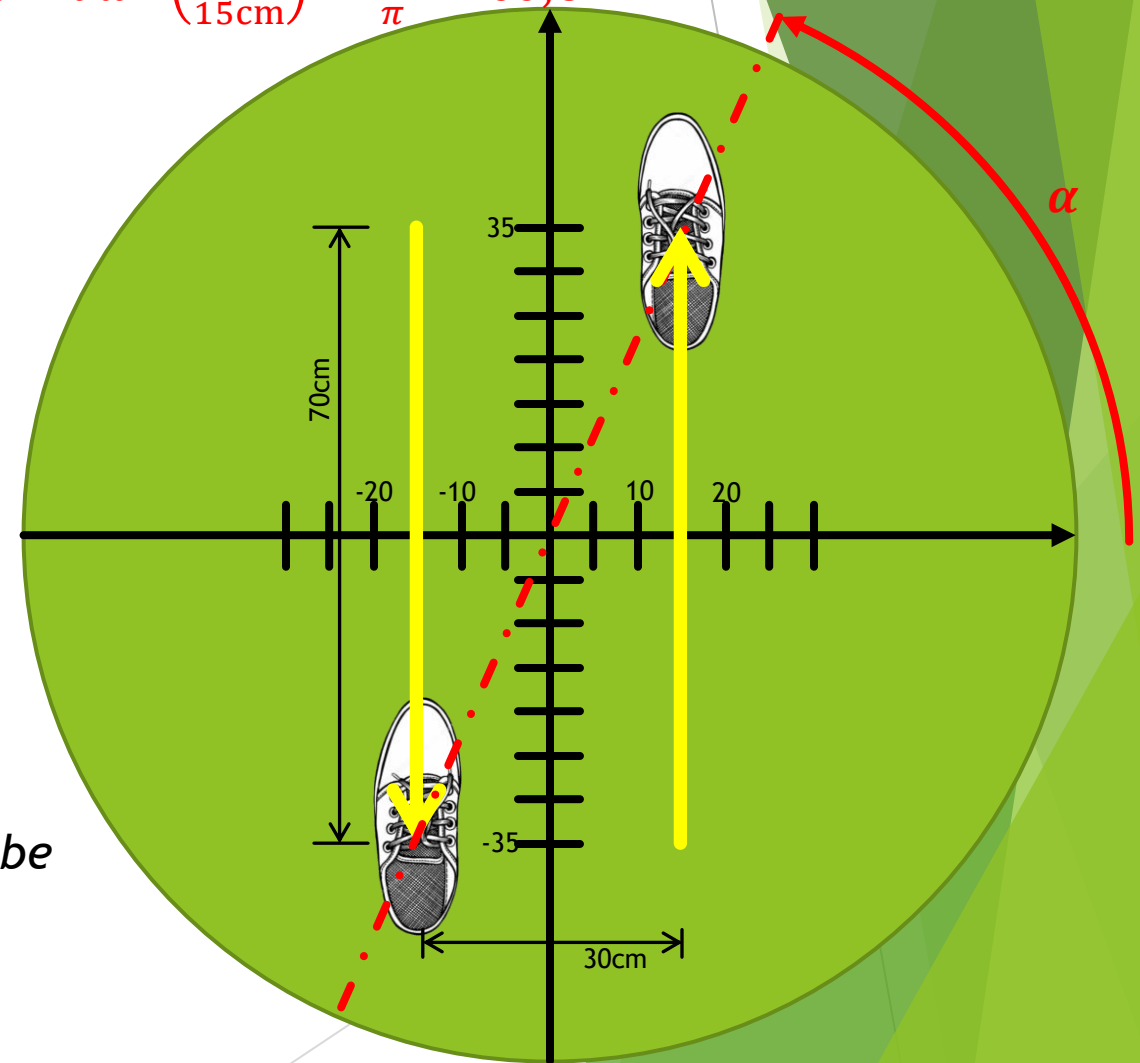
In other words

To take one full step (70cm) in 0,72s, the axis has to rotate from 0° to +66,8°.

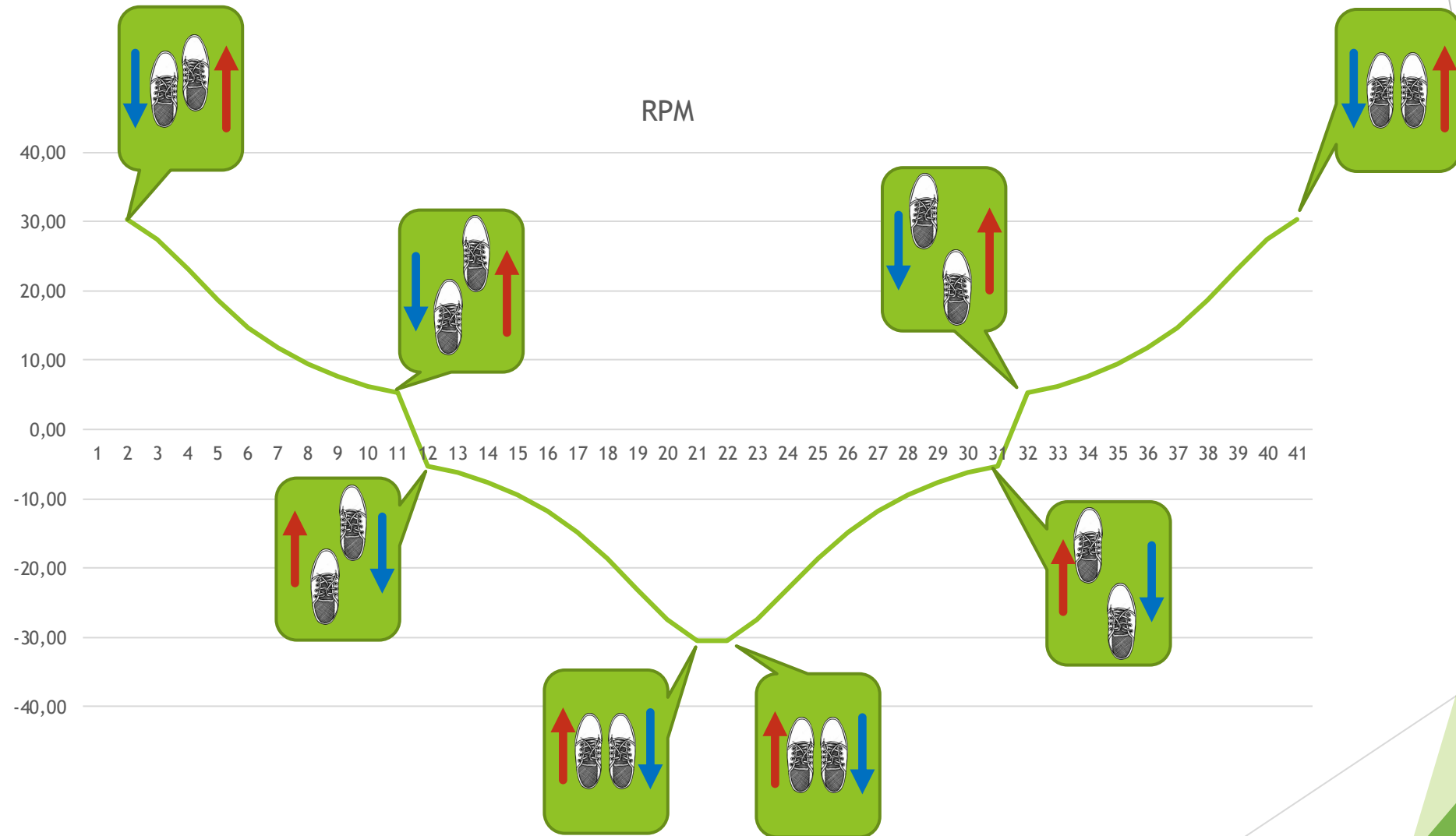
This makes around 92,8° per second or 15,5rpm where the disc has to spin.

Note: 15,5rpm is not the fastest speed which has to be achieved, because the rotation speed depends on tangens and the feet distance (while standing).

$$\alpha = \text{atan} \left(\frac{35\text{cm}}{15\text{cm}} \right) \times \frac{180}{\pi} = 66,8^\circ$$



Walking straight ahead with 70cm in 0,72s



Note: as you can see, the highest rpm is about 30rpm or 180° /second.