



important hints:

- Watch movie from 5:00 AM and answer question until 23:00.
- Solution movie and points provided at 8:00 the next morning.
- Answer weekend questions until Monday evening 23:00.
- Answer **exactly once**. Answers cannot be changed.
- In case of questions, ask them via contact form on webpage **before** answering.
- Additional hints might be given in the „**hint of the day**“ (red bauble on webpage).
- Start with two jokers. Gain another joker by watching 10 solution movies. Jokers are played automatically in case of need.
- **Audience Joker**: See how the other participants voted and then decide. You can use this joker only once.
- **50:50-Joker**: Reduce the selection to only two options, one correct one and another one. You can use this joker only once.

This year, you can also receive PiA messages via Telegram channel <https://t.me/PhysicsInAdvent>

Shopping list for PiA – Physics in Advent 2020

www.physics-in-advent.org

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|---|--|
| 1.) <ul style="list-style-type: none">• cardboard (about DIN-A4 size)• scissors, ruler• household rubber band | 5.) <ul style="list-style-type: none">• at least four sheets of A4 paper (coloured or white)• scissors, straws• transparent adhesive strips |
| 2.) <ul style="list-style-type: none">• 2 water glasses• a little milk• ballpoint pen or pencil• smartphone with slow-motion function | 6.) <ul style="list-style-type: none">• candle, funnel (about 15 cm long and 14 cm diameter) |
| 3.) <ul style="list-style-type: none">• three rolls of toilet paper• a smartphone or other frequency generator with headphone jack• earphones with separable loudspeakers• adhesive tape for marking | 7.) <ul style="list-style-type: none">• mobile phone with camera and flash• transparent adhesive strips• waterproof pens in blue and purple• white chalk or flour• kitchen grater, washbasin |
| 4.) <ul style="list-style-type: none">• well jumping bouncy ball• a table with flat underside, preferably without edges or other objects under the table top• adhesive strips for marking | 8.) <ul style="list-style-type: none">• funnel, table tennis ball• beaker or bowl, water |
| | 9.) <ul style="list-style-type: none">• 10 domino stones |



10.)

- (digital) kitchen scale, water
- larger water container, into which a fist fits

11.)

- a mirror of the size approx. 40 cm * 60 cm (e.g. of the bathroom cabinet)

12.)

- water glass or measuring cup, water
- raisins, wooden stick (or fork)
- oil (sunflower or olive)

13.)

- non-transparent bowl
- piece of cardboard (5 cm * 5 cm), scissors
- pin (>2 cm long) with colourful head

14.)

- four tea lights, two coins
- two transparent bowls
- two drinking glasses of the same size (big enough for three tea lights)
- a screw cap of a bottle

15.)

- three hard-boiled eggs
- three water glasses
- three empty toilet paper rolls
- small tray or breakfast board

16.)

- tea light, 2 clothespins
- 2 CD sleeves with transparent cover

17.)

- tea lights, cover of a CD case
- water glass, watering can

18.)

- water atomizer (e.g. for flowers), water
- window pane

19.)

- two water glasses, water
- two straws

20.)

- beverage can
- pointed slotted screwdriver or scissors
- two drinking glasses
- bent straws with large diameter (>2 mm)
- adhesive tape
- plasticine
- water tub or sink, water
- stop watch

21.)

- transparent plastic cup
- candle, pliers
- nail or metal paper clip
- bent straw
- drip pan or washbasin

22.)

- cork (as wide and high as a thumb)
- 81 paper clips
- 30 cm high container or 10l bucket

23.)

- two tea lights with aluminium cover
- small slotted screwdriver or nail
- sturdy scissors, sewing thread
- long ruler or broom handle
- magnet as strong as possible, e.g. a bar magnet from school or a strong fridge magnet

24.)

- a large water glass, water
- sunflower oil or olive oil
- syrup, e.g. maple syrup