1. Totalreflexion im Aquarium

$$n = 1.333$$

(a)

$$\theta_{crit} = \arcsin\left(\tfrac{1}{n}\right)$$
$$\epsilon = \arcsin\left(n \sin\left(90 - \arcsin\left(\tfrac{1}{n}\right)\right)\right) = \arcsin\left(\sqrt{n^2 - 1}\right) = \underline{\underline{68.68°}}$$

(b)

(c)

2. Brewsterwinkel

(a)

(b)

(c)

$$\theta_B + \theta_r = 90°$$
$$n_1 \sin(\theta_B) = n_2 \sin(\theta_r) = n_2 \sin(90 - \theta_B) = n_2 \cos(\theta_B)$$
$$\theta_B = \underline{\underline{\arctan\left(\tfrac{n_2}{n_1}\right)}}$$

(d) $n_2 = 1.55$

$$\theta_B = \arctan\left(\tfrac{n_2}{n_1}\right) = \arctan(1.55) = \underline{\underline{57.17°}}$$

(e) Polarizing glasses use Brewster's Angle to block some of the incoming light (horizontally polarized) to reduce glare on eg. the surface of water

3. Polarisation

(a)

(b)

(c)

4. Physik als Fach

(a) I think its both, biased and unbiased. The core thought and motivation of physics is to get an universal understanding of what goes on around us and in order for this to be universal it has to be unbiased. However the ones doing physics are humans, which suck at being random and unbiased so there will always be a bias due to our human nature. For example

(b) Diversity in Physics is paramount to minimize the bias discussed above because the more

(c) I don’t think all people in the physical community get the same treatment. A challenge for everyone is to name a black physicist and it gets even harder if we also ask for a nobel prize. In fact this is impossible as to date no nobel prize in science can be attributed to an african american scientist. This is partly due to the fact that less even start a university course in science and naturally less .