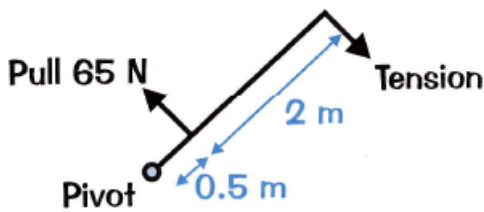


Ex1



A rabbit is using a fishing line to hook a carrot out of the water.

- Calculate the moment of the 65 N force about the pivot.
- The pull exerted by the rabbit is balanced by the pull in the fishing line. Work out the tension in the fishing line.
- The fishing line will break if the tension becomes more than 60 N. If the pull is in the same direction as before, what's the maximum force the rabbit can use?

Ex 2

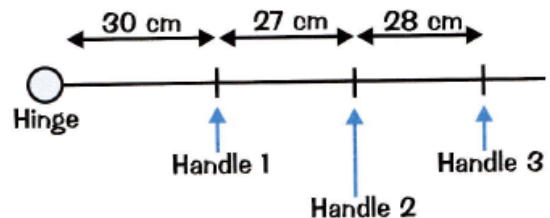
A 5 m long plank is pivoted at one end. The plank is held up at the other end so that it is horizontal.

- If a man weighing 500 N stands on the plank, 3 m from the pivot, what upward force is needed to keep the plank horizontal?
- What force is needed to keep the plank horizontal if the man stands 4 m from the pivot?
- If the man puts on his thick coat, which weighs 60 N, and stands 2 m from the pivot, how much force will the person holding the end of the plank need to keep the plank level?
- The plank-holder can push with a maximum force of 550 N upwards. Can she keep the plank level if the man stands 3 m from the pivot wearing the coat and a 200 N hat?

Ex 3

There are three handles on this door. The hinge needs a moment of 20 Nm to open the door.

- If handle 1 is pushed with a force of 10 N, nothing happens. Why won't the door open?
- What (to 1 d.p.) is the smallest pushing force needed to open the door with handle 2?



- What's the minimum force (to 1 d.p.) needed to open the door with handle 3?
- Why are door handles usually on the opposite side to the hinges?